THE
DENTAL DIGEST

Vol. XXXIV MAY, 1928 No. 5

Some Aspects of Nitrous Oxid and Oxygen Anesthesia of Practical Application to Exodontia for Office Practice*

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In my remarks to you this evening I intend to devote my attention to some of the practical considerations with which a dentist is concerned in the administration of nitrous oxid and oxygen for the extraction of teeth in his office. If I fail to touch upon certain factors related to the subject of general anesthesia in exodontic procedures, it is because I find them of no practical concern either to you or to me. Let us leave the deeper theoretical study of general anesthesia to the textbook author and his readers. I lean heavily toward practical things. Life is too short and too complex to permit of too much lingering on the threshold of the unpractical—the things which do not concern us in our daily duties. Let us enter then into the Chamber of Practical Achievement.

For considerations of very practical importance I believe that I may arbitrarily set a limit of ten minutes as the duration of an operation under a general anesthetic in the office. Operations requiring more time than that ought to be performed in a hospital or under a local anesthetic or in the nature of a multiple-stage operation. My reason for this attitude is a high regard for the safety of the patient. When we carry our patient along for a period exceeding ten minutes, we cannot do justice to his welfare and keep our eyes glued to the field of operation. Again, patients awakening from a longer operative anesthesia require a more protracted period of recovery, and this is not feasible in the office.

I believe it to be fundamental in the handling of cases of exodontia under a general anesthetic that we first become very proficient in the extraction of teeth under local anesthesia. By proficiency I mean the ability to recover at once a portion of a tooth which fractures during the

* Read before the Queens County Dental Society, Long Island City, N. Y., March 19, 1928.

effort at delivery. Unless an operator can succeed in the great majority of instances in these contingencies, I feel that he would better limit his technic to local anesthesia or discontinue the administration of the general anesthetic as soon as he has fractured a root. To become perplexed and find one's self at a loss as to how to continue with the patient unconscious may lead to trouble.

I am in favor of nitrous oxid and oxygen being administered by the nasal method rather than by the face mask, even for a single extraction. My reason for this is that in the event of the dentist's meeting with difficulty during the extraction of the tooth he need not feel that the patient is coming out of the anesthesia, which would be the case had he employed a face mask. The patient should receive the anesthetic mixture for the entire period of the operation, and there should be no cessation of the flow of gases until the tooth has been extracted and the socket smoothed down.

I am in the unique position of being almost alone among the dental anesthetists of the country in operating upon my patients while they are sitting practically upright in the chair. The usual position is the reclining one, and some use the prone position. I have found my operative position for my patients so successful that I am very enthusiastic in advocating it for the general practice of exodontia under inhalation anesthetics.

There are several advantages that commend this upright position to the favorable consideration of the profession. First, there is the obviation of the necessity for "packing" the throat, which is so necessary when the chair is turned back. Sponges used as throat packs can so readily become actual asphyxiators. They act thus, not only preventing air from entering the lungs and disturbing the anesthetic balance, but also actually preventing the gas-oxygen mixture from going down the air passage. But occlusion of the throat air passage is necessary if we are to maintain proper anesthetic balance. What then? I advocate the introduction of a sponge of suitable size just posterior to the field of operation and held in place by the fingers of the assisting hand. Such a sponge needs no string attached to it because it is in no danger of being forced down beyond easy recovery.

The second advantage of the upright position of the patient is that blood and mucus and tooth particles gather and gravitate forward toward the chin in the floor of the mouth rather than toward the throat. Nausea is thus eliminated.

The third advantage of the upright position is a reduction in the tendency of the blood pressure to rise when nitrous oxid and oxygen is employed.

The fourth advantage concerns itself with the position of the operator for all extractions under nitrous oxid and oxygen in the office. I

believe that by standing to the right and in front of the patient in the upright position the operator will be in the best position to detect any unfavorable symptoms that may arise during the administration and institute prompt measures for their relief.

The fifth advantage is psychic. I believe that a patient is more frightened when placed in the chair in a reclining position than when permitted to sit upright. The approach of the operator from behind the chair is obviously conducive to preanesthetic excitement.

We are frequently confronted with the problem of anesthetizing a young child or an elderly individual. With these patients, as with perhaps every other type in general, I believe it to be unnecessary to pass into that stage of anesthesia usually known as secondary saturation. I believe that when we accomplish the object of our anesthetic, which is a painless operation, we are doing all that is to be expected of us. Therefore, since a stage of operative interference is presented to us long before the deep anesthetic stage has arrived, the practical thing to do—and to minimize our anesthetic risk however small it may be—is to proceed with the extractions. You will find that the patient will recover more quickly than otherwise, and with the ordinary dizzy after-effects considerably reduced.

Excitement is a very variable factor in our dental anesthesias. Some patients manifest it to an inordinate degree. Some show absolutely no tendency to excitability. One very important factor should be borne in mind as being concerned with inducing excitement at the outset of the induction period, and that is the force of the delivery of the gases. The first inclination of the patient is to withhold normal breathing as soon as the inhaler is applied. That is natural for at least the first second or two. If at this moment the gases are permitted to flow with force into the breathing bag and against the patient's nose, it is obvious that the disagreeable contact is going to induce an effort to resist a smooth induction. The remedy, then, lies in permitting the nitrous oxid and oxygen to flow slowly into the bag and not too strongly into the inhaler.

I would advise the dentist who is a novice with general anesthesia not to attempt too much in the beginning. He will find himself gaining in confidence if he confines himself in the first few years to removing a few teeth rather than a large number at one administration. The point is that he should avoid getting into difficulties. He may be quite easily discouraged with nitrous oxid and oxygen if these trying occasions occur frequently.

In order to simplify our technic, I believe in giving the patient oxygen right from the very start of the anesthesia. Many operators commence with pure nitrous oxid and do not add oxygen to the mixture until the patient has become dusky and has already manifested entrance

into the first stage of anesthesia. At various periods during the anesthesia many operators will supply and cut off oxygen. This complicates the technic for the dentist. I favor giving the patient from the outset the mixture of nitrous oxid and oxygen which we know induces and maintains anesthesia. With the machine thus regulated the operator's attention is turned almost completely to the patient, where it belongs.

Speaking of machines leads me for a moment to a brief comment on machines in general. I am constantly asked what machine I advocate for nitrous oxid and oxygen. Let me tell you that there is only one machine for you and me to pay the strictest attention to, and which should give us complete concern, and that is the human machine.

An apparatus, of whatever manufacture, can only deliver to our human machine, the patient, the gases of proper anesthetic balance. Automatic devices for producing anesthesia, and which blow a peanut-stand whistle when the patient is asleep, have no place in your practice. Here lies danger. If you are getting away with it, it only goes to show how safe an anesthetic nitrous oxid and oxygen is after all, and how much it may be abused. But the danger is there notwithstanding. Watch the patient and not the dials.

Let me narrate an experience which I had recently which emphasizes this point of the fallibility of dials. They are dreadfully deceptive. We were giving a trial to one of the new machines recently at the Hospital clinic. The flow of gases was adjusted according to the dials by the demonstrator, who was a licensed dentist. Everything was set for a favorable demonstration. Within twenty seconds the patient was asleep. He was not only asleep, but much more deeply anesthetized than was necessary for what was to be done to him. I told the anesthetist to get the patient out of the deep anesthesia, as to my mind he was really somewhat in danger. He looked very clammy and cyanotic. The demonstrator turned his dial and said I need not worry. He knew *his machine*. But, gentlemen, I knew *my machine*. My machine was the patient, and my patient was not turning pink fast enough to suit me. I pulled off the inhaler and resuscitated my patient without waiting for the expected oxygen flow as per dial. Failure No. 1! A second patient and a third patient followed, with the same experience. I then discontinued the demonstration and continued with my own technic, and things went smoothly once more. The demonstrator went away downhearted. He could not explain what had happened, but an hour later he discovered the reason. The oxygen tank had nitrous oxid in it—that was his discovery! If true, what does it teach me? Simply that, dial or no dial, my patient was not receiving oxygen, even though the indicator said he was. Such experiences may come to anybody at some time or other. They are fraught with danger. Be on your guard, gentlemen.

I am in favor of applying some means of restraining bands to the patient as he or she is about to pass along into deeper anesthesia. Some manufacturers are already marketing dental chairs equipped with these leather straps. These may be applied to any chair, however. I have discarded the towel webbing I used to employ for the purpose and find satisfaction with broad leather belting. One belt crosses the chest. This should not be too tight and should permit free movement of the lungs in respiration. One band passes around each wrist and binds it to the arm of the chair. One belt passes over the lap, clamping the knees and legs together, and, with individuals manifesting tendencies to unusual body movements, another belt is at hand to pass around the ankles.

At the outset of the induction a good mouth prop should be introduced. This is essential, even if the anesthesia is to be induced for a non-dental operation or for an external incision without the extraction of a tooth. Since anesthesia from nitrous oxid and oxygen is attended by rigidity and fixation of the jaws, it is obviously necessary to have the mouth open to afford access to the throat in the event of cyanosis resulting from the tongue falling backward and occluding the air passage. Swallowing is impossible when the jaws are opened to their limit. Therefore it is advisable not to remove the prop until the patient has recovered consciousness, lest he involuntarily suck down blood and tooth debris accumulated in the mouth before ejection.

Props rarely stay where we want them. The assistant should be instructed to help keep them in place and to help transfer them from one side of the mouth to the other in cases of multiple extractions on both sides of the mouth.

So-called tongue forceps are superfluous. Whenever it becomes necessary to bring the tongue forward to permit freedom of respiration, the index finger may be introduced very satisfactorily at the base of the tongue and brought forward. At the same time pressure is brought to bear against the diaphragm with the other hand to expel the gases from the lungs.

In my administration of nitrous oxid and oxygen I am guided almost entirely by the breathing of the patient. Eye reflexes are sometimes misleading. Some patients are asleep when their eyelids still react to the touch of the finger, and some are not asleep even though their eye reflexes are apparently absent. I work on the supposition that my patient has not eyes. They all have lungs, and these organs are never failing, always dependable indices of anesthesia. The deep, rhythmic respirations are usually accompanied by snoring sounds, and so long as you hear these continue, you may rest assured that your patient is enjoying a happy anesthetic oblivion.

The danger from nitrous oxid and oxygen arises from a state of

cyanosis which leads to respiratory paralysis. Therefore, so long as we avoid deep cyanosis, we are well within the safety zone. Keep your patient just slightly dusky and have an eye constantly on the mucous membrane of the lips and the skin of the face.

Many of your patients for extraction of teeth are undoubtedly children. Extreme caution must be exercised with this type from the psychological viewpoint, even though this form of anesthesia is ideally suited to them. Instead of giving them the usual percentage of 7% to 8% of oxygen to 93% or 92% of nitrous oxid I advise an increase of the oxygen to about 20%. Children are very liable to show asphyxiating manifestations much more readily than adult patients.

A good point to bear in mind relates to the excited individual. As soon as he or she commences to show undue signs of excitement, it is best to apply a little pressure against the bag and increase somewhat the percentage of nitrous oxid to carry the individual quickly past this stage of excitement. As soon as the exciting symptoms have ceased to manifest themselves, be sure, however, to readjust the flow of gases to their former rate or you will have an onset of asphyxiating symptoms.

I am happy to note an increased interest on the part of the profession generally in nitrous oxid and oxygen as an office anesthetic both at their own hands and as a recommendation to their patients for a specialist's services. With careful attention to the essentials and a due regard for the demand of the human machine, nitrous oxid and oxygen may continue as in the past to merit the favorable consideration of the profession at large.

730 Fifth Avenue.

A New Idea In Partial Denture Construction

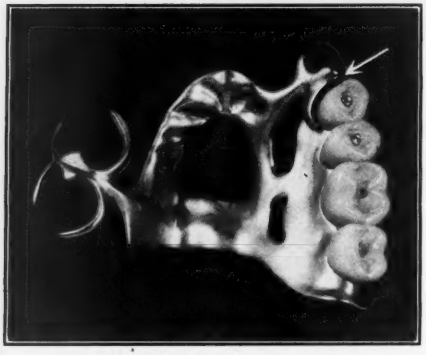
By Henry Callsen, New York, N. Y.

In reviewing the past ten years of dental history the American dental profession may feel justly proud of the wonderful progress achieved in so short a time. The crude, old-time ideas have disappeared and in their place we have today methods that are highly scientific and artistic. This is particularly true in the field of prosthodontia. It is with a feeling of pardonable pride that one who has devoted more than twenty years to this branch of dentistry is able to point to our great variety of modern restorations, where only a short while ago we had nothing but ordinary rubber plates and crown- and bridgework. Of the many branches of dental prosthesis I wish to refer particularly to partial gold dentures.

Volumes have been written about the various methods of partial denture construction, but the controversy over the best method of retention is still a matter of divided opinion. However, it seems to me that clasps have been accused of many crimes for which they were not *directly* responsible. It is my intention in this article to place the blame where it really belongs. As a laboratory owner, specializing exclusively in removable gold dentures of every type for a better class of dentists, I am pleased to state that many instances have been brought to my knowledge where no harm has occurred from the use of clasps over a number of years. Of course, the number of failures was in the majority, but the fact remained that in *some cases,* for *some reason* or *other,* clasps *could be used successfully.* It seemed only natural to assume that with a little intelligent study one might be able to *solve* the *hidden secret* of such successful cases. From there it is only another step to apply this secret in all cases and to expect a much greater measure of success than has been enjoyed heretofore.

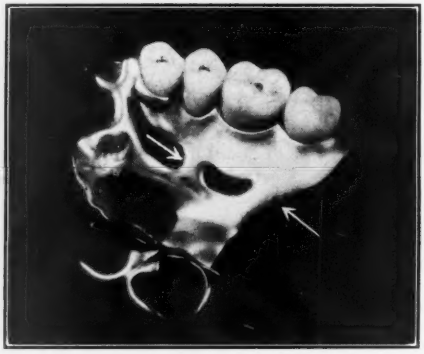
It has been my pleasure to devote considerable time to this problem, and I believe that I am on the right track at last. After much experimenting I am forced to believe that our troubles have been due to faulty denture construction and not to clasps, nor to any particular type of clasp. By faulty construction I refer to the *common practice* of attaching the saddles directly to the clasps, thereby creating a rigid denture. This is the point where we all have erred so badly.

In order to make myself clear about this significant point, which seems to have eluded us in our work, allow me for a moment to make reference to certain commercial articles. Chairs, sofas, beds, wagons, automobiles, street cars, etc., are equipped with springs and cushions to *prevent* shock to the human system; even shoes are furnished with rubber heels and soles. But what are we doing in denture construction to absorb or lessen the shock or force of mastication?



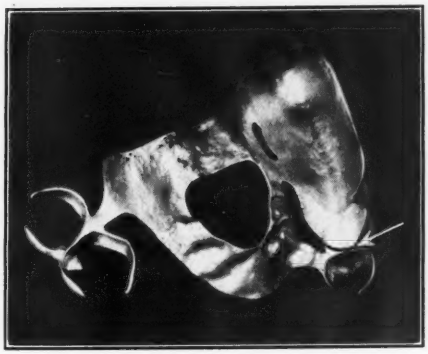
Saddle movement—note opening between first bicuspid and lingual stop.

Hundreds of blows are struck every day which are transmitted directly to the clasp, causing it to move more or less. We all know that movement produces friction, which in turn is very injurious to the tooth enamel, allowing it to become an easy prey to the ever-present mouth acids. If resorption takes place, as it will under rigid dentures, then the whole force of mastication falls on the abutment teeth, causing trauma and final destruction. The damages resulting from rigid denture construction are: tooth decay under clasps, resorption under saddles, trauma and loss of abutment teeth. Stress-breakers such as we have today are only a feeble gesture in the right direction. They are, however, very often a constant source of annoyance to the patient, especially in upper cases, by allowing the denture to stand away from the palate.



Lingual view of case, showing stop at first bicuspid to prevent damage to denture by patient in removing. The arrows point to flexible connections.

What can be done to remedy the existing conditions? The answer is surprisingly simple. By detaching the saddles from the clasps or attachments the former are permitted free movement. This movement will absorb the force of mastication, hence no severe shock will be transmitted to the abutments. A certain amount of force will be directed against the tissues with beneficial results. The entire movement is controlled by the metal employed (flexible clasp metal) and by the design of the denture and may be regulated as desired without remaking the case. No other stress-breakers are required.



Palatal view, showing disconnection between clasp and denture.

This new principle may be applied in any case where a partial denture or a removable bridge is indicated and will function equally well in either upper or lower cases, not merely under favorable conditions but always.

Of course, nothing made by man will ever be 100% perfect, but I sincerely believe that dentures made in this way will be far superior, and far *less harmful,* than anything yet known to dental science. The idea, at least, is too big for me to keep, so I am glad to give it to the dental profession of America for further development.

145 West 45th Street.

The Rise and Fall of Oral Hygiene In Bridgeport

By George Wood Clapp, D.D.S., New York, N. Y.

FIFTH ARTICLE

PAVING THE WAY FOR AN IMPORTANT LESSON

If the short practical course with a few lectures which was given to the ten young women in the summer of 1914 to prepare them for work in the schools is not counted as one of the regular courses, what we may consider as the second course for dental hygienists began in Bridgeport on April 30, 1915. Thirty-two lectures were given, one on each of four evenings per week for eight weeks. The names of the lecturers included some of the men who had addressed the first class—Osburn, Price and Rettger from outside the dental profession, and Strang, Kirk and Fones from within it. It is especially interesting to find that Dr. J. Leon Williams gave two lectures on dental caries, for probably no man in America had made a more careful study of what occurs in caries or was better fitted to present what he had learned.

The announcement for this class shows that its purpose was to train additional hygienists for work in the public schools. There were forty-six registrants, including the ten young women already at work in the schools. These ten were given the full lecture course. They had already completed the practical course and had been at work throughout one school year.

Ten of the other registrants were formed into Class A and were given the theoretical course and the practical course without cost, because they were being trained for the school corps.

Fifteen who were already employed as chair assistants in dental offices, or who were assured of positions in dental offices, were formed into Class B. They were given the full theoretical and lecture courses in return for a fee of thirty dollars.

Fifteen others were formed into Class C. They were expected to take the full theoretical course and to listen to the instructions and observe the technic in the practical course, but not to do practical work because of lack of facilities to accommodate them. This plan was modified so that they received practical instruction also. The fee for this class was originally fifteen dollars.

The practical work for this second class began on July 6, 1915, and comprised fifteen lessons. From among the graduates of Class A six were selected by competitive examination and added to the staff of school hygienists when the schools opened in September, 1915. This made it possible to take care of all the children in the first three grades of the public schools.

It is interesting to note that the school dental hygiene had so commended itself to the city fathers that there was no difficulty in securing an appropriation of $10,000 for the session of 1915-1916.

A third course began on November 3, 1916. The lectures were completed on the following March 21st, and the practical work the last of May. Some new names appear in the list of lecturers, as follows:

Charles N. Haskell, M.D., Lecturer in Post-Graduate School of Physicians, New York.

Charles F. Ash, D.D.S., New York.

W. A. La Field, M.D., Specialist in Radiography, Bridgeport, Conn.

Miss Jessie Bancroft, President of American Posture League, New York.

C. E. A. Winslow, M.D., Professor in Yale Medical School, New Haven, Conn.

Frank P. Underhill, Ph.D., Assistant Professor of Physiological Chemistry, Sheffield Scientific School, Yale University, New Haven, Conn.

The graduation exercises of this class were held on June 11, 1917. They completed the launching into the dental world of ninety-seven carefully trained hygienists. This was the last class that Dr. Fones conducted. He had merely "carried on" until the professional educational institutions were ready to take up the work. In 1916 three courses were offered to dental hygienists under what he considered to be proper conditions, one in Vanderbilt Clinic of Columbia University, one in The Rochester Dental Dispensary, and one at The Forsyth Dental Infirmary. At the present time there are ten training schools for dental hygienists, all in connection with large colleges.

Six of the graduates from this third class were added to the staff of the fourteen already at work in the public schools. This made it possible to take care of the mouths of all the children in the first five grades.

Amendments to the Connecticut Dental Law

In 1907 prospective new provisions of the Connecticut dental law made it unlawful for dentists to use unlicensed assistants in their operative work. Dr. Fones, as chairman of the Legislative Committee, in revising the law inserted a clause that this new provision "shall not prevent an assistant of a registered or licensed dentist from performing the so-called operation of cleaning teeth."

Up to 1915 there was no legal control for the work of the dental hygienists. The increase in their numbers, the evident value of their

services in the schools and private practices, the conviction that their numbers would increase, and that the profession and humanity would profit thereby, and the evident desirability that their activities should be controlled by law before unpleasant complications arose led Dr. Fones to draw up, in 1915, an amendment to the Connecticut dental law and urge its adoption. There was no difficulty in securing its passage, for, to the credit of the dental profession in that State, be it said that there never was any organized opposition on the part of the dentists to dental hygienists. On the contrary, there was a general spirit of cooperation, and it was this spirit that permitted Connecticut to advance so far and so rapidly in this desirable form of service. Twenty-six States have now legalized the activities of the dental hygienists.

The original dental hygienist practice act read as follows:

"Any registered or licensed dentist may employ women assistants, who shall be known as dental hygienists. Such dental hygienists may remove lime deposits, accretions, and stains from the exposed surfaces of the teeth and directly beneath the free margins of the gums, but shall not perform any other operation on the teeth or mouth, or on any diseased tissues of the mouth. They may operate in the office of any registered or licensed dentist, or in any public or private institution under the general supervision of a registered or licensed dentist. The dental commission (state board of dental examiners) may revoke the license of any registered or licensed dentist who shall permit any dental hygienist, operating under his supervision, to perform any operation other than that permitted under the provisions of this section."

Cleaning the Teeth of Soldier Boys

In order to keep the different classes of hygienists supplied with patients, it was necessary to find a great many people who desired or could be persuaded to have their teeth cleaned. A photograph of the second class of hygienists working for a troop of Boy Scouts is shown here. So impressed were some of the big manufacturers with the value of this service that they released some of their employees half an hour before quitting time so that they might reach the classroom in time for the girls to clean their teeth.

In May, 1917, there were encamped near Bridgeport 150 Connecticut National Guardsmen who had been mobilized for the A. E. F. Dr. Fones knew that these boys were to be subjected to arduous training and experience and to exposure and hardship, and that it was important to the success of their mission that they should be in excellent physical condition. Long experience assured him that, however fit they were otherwise, they were probably unfit dentally, and that under the stress of cold and wet and fatigue latent dental troubles might flare up

and make them unfit for service. He knew also that unless some one made it his business to see that their mouths were cared for, these boys might be subjected to much unnecessary suffering. He went to the commanding officer and asked if he would not like to have the mouths of these men put in good condition, so that they might be less liable to

Second class of dental hygienists working for Boy Scouts.

dental trouble when they got into service. He accepted the offer gladly and detailed the men in squads of twenty.

The mouths were all in unsanitary condition, with heavy deposits, much food debris, dark and congested gums, and pus exuding from about

the necks of many teeth. The hygienists of the third class cleaned many of the mouths before the class graduation, and when Dr. Fones had supplied each soldier with a toothbrush, they drilled each group as it was treated until the men understood how to use their brushes correctly. The class labored diligently, but it was not possible to complete the work for the entire 150 men before graduation, so Mrs. Newman, Dr. Tuthill, Dr. Fones and Miss Cortright continued the work until it was completed. After spending the entire day at the office as usual, they returned for two hours or more on each of three or four evenings per week until all the men had been served.

Dr. Fones made a chart of each mouth. These charts showed that 31 men had more than 10 cavities each, that 38 had 10 cavities per man, and that 54 had five or more cavities. A group of public-spirited dentists had agreed to do the necessary restorative work and to them the men were referred, each carrying his chart. Perhaps the busiest man in all this group was Dr. W. J. McLaughlin, who did the extracting. This work was completed several weeks before the formation of the Preparedness League of American Dentists and is believed to have been the first organized effort by American dentists, outside the U. S. A. Dental Corps, in behalf of our soldiers.

The Call to Service

In June, 1917, the Connecticut Dental Hygienists Association met at New London. Under the leadership of Mrs. Newman, who was made chairman of the Committee on Prophylactic Work for Connecticut Draftees, the girls agreed that each of them would clean the mouths of twenty-five soldiers. The work was to be done in the offices where they were employed, and, so far as possible, they kept their pledges. But it proved almost impossible to get the men into the offices, and it was readily apparent that the achievements were not keeping pace with the need.

In January, 1918, Dr. DeLan Kinney addressed the Fones Alumnae at Bridgeport upon the work of the Preparedness League of American Dentists, including the story of at least a part of what the hygienists in New York had done. Enthusiasm was aroused anew and with it the perception for the necessity of a more effective organization. So Dr. Fones reopened the room in which the classes of hygienists had been trained and equipped it with 20 portable dental chairs with an electric light over each chair, sinks, sterilizers, etc. He personally paid all the expenses of conducting the clinic, with the exception that each hygienist supplied her own instruments.

Here 37 members of the Connecticut Dental Hygienists Association, in cooperation with the Preparedness League of American Dentists,

labored three evenings a week throughout the summer of 1918 and until near the close of the War. The stamina which had led some of the young women to commute that they might receive instruction for their own benefit was not lacking now in the service of others. Miss Moores and Miss Russell came from Stamford, Miss Lockwood from Norwalk, the Misses Keene, Borchardt and Birdsall from Hartford, and several from New Haven.

The records of this service do not seem to be quite so complete as might be desirable, but those at hand show that Mrs. Newman and Miss Cortright had taken care of 23 draftees in the office, and 523 other draftees had had their teeth cleaned, the necessary restorative work being done by a group of 55 Bridgeport dentists, had received tooth brushes and had been drilled in their correct use. This makes a total of 693 soldiers known to have been served in this way between the middle of May, 1917, and the close of the summer of 1918.

An Important Discovery

The story of the work for these boys up to this point has been told many times, and nothing is added to it here. But a discovery made in connection with that work, or an old truth better demonstrated, which seems to be of great importance, appears never to have been sufficiently emphasized. It has an important bearing on the question of susceptibility to dental caries and to diseases of the oral soft tissues.

These 600 soldier boys were roughly divisible into three racial groups, Italians, Americans, and races from Northern and Central Europe. However unlike they may have been in other respects, they were alike in that their mouths were very unclean. Dr. Fones says that he does not see how they could have been more so. They presented in liberal measure every form of dental uncleanliness, food debris, deposits and bacterial plaques. The extent of the accumulations is shown by the fact that a skillful graduate hygienist was often compelled to labor diligently for an entire evening to clean one mouth.

When the mouths of a few boys of each nationality had been cleaned, an astounding difference began to be observed. The teeth of the Italians were generally all present and practically free from decay, while the teeth of the others were so ravaged by decay that many of the mouths were nearly ruined. The gums of the Italians were generally healthier than those of the other races, were of better color, and, when relieved of the pressure of deposits, quickly exhibited a healthy tone.

When this difference became so apparent as to divide these boys into two groups, Italians with sound teeth in one group and all the others with bad teeth in the other group, Dr. Fones personally oversaw the staining with iodin of the teeth in some hundreds of mouths. There

was a possibility that the teeth of the Italians might be free from bacterial plaques or show them in small numbers, which might be the reason why they had escaped decay.

If he cherished this hope, he was doomed to disappointment. The teeth of the Italians were completely covered with bacterial plaques. Nobody knows how long they had been there, but there was no visible reason why they had not stayed until they were brushed off by food or died of old age, since the majority of these mouths had never been served by a dentist, and these boys were not in the habit of brushing their teeth. Yet in many of these mouths, when these plaques were removed, the texture of the enamel was such as to excite the admiration of the beholder—brilliant, hard, perfect. However many germs there may have been in these plaques, and however much acid they may have secreted, and however long the enamel may have been exposed to its continuous action with no help from without, that enamel had proved invulnerable.

The teeth of the Americans exhibited conditions very different from those of the Italians. Covered with plaques and other debris in the same manner, they showed, when cleaned, great vulnerability and little evidence of resistance. Caries was rampant and destructive, and many extractions were necessary.

The more observant hygienists came, after a little while, to recognize important differences in the teeth of the different races. In the teeth of the Italians, Armenians and Poles, whose dental resistance to caries was highest, the enamel was always a little yellowish in color, while that of the Americans and other susceptibles was always whiter. They came therefore to associate the thought of this yellow enamel with high resistance and the thought of the white enamel with beauty and susceptibility.

There were two characteristics of form in bicuspids and molars which, if ever rightly understood as to origin, may be of tremendous importance in the very fundamentals of our service to humanity. The cusps of the molars of the Italians were low, the fossae wide and self-cleansing, and there were no fissures. There were dark lines marking the bottoms of the grooves, but the bottom of each groove was perfectly calcified. The bicuspids and molars of the susceptibles were very different in form. The cusps were high, the fossae narrow and deep so as to retain food easily, and there were abundant evidences of imperfect calcification at the bottoms of the grooves. Is it possible that narrow molar surfaces with high cusps and deep fossae are evidences of physical deterioration? Might they be, at least in part, the result of nutritional deficiencies, perhaps dating back to a time before birth?

Out of 401 mouths upon which Mrs. Newman reported in March,

1918, Dr. Fones passed 29 as perfect and 111 as not requiring any operative work. These were all or nearly all Italians.

Confronted, then, by an apparently identical attack with opposite results on too large a scale to permit the peculiarities of an individual to be an important factor, Dr. Fones was compelled to think that the results depended not upon the presence and continuation of the plaques, but upon what the plaques had to contend with. To paraphrase a sentence which Price was to utter later, it became less a question of what kind of plaques the tooth had than of what kind of tooth the plaques had. This was the more apparent because many of the dirtiest mouths among the Italians did not exhibit a trace of decay.

It is fortunate for us that there were so many boys. If there had been only one or two, the phenomenon might have been interesting without attracting great attention. And it might have been explained on the grounds of racial heredity or of some undiscerned physical peculiarity. But here were about 200 of each race with the dental differences clearly defined. Whatever it was that made that difference, it was not something peculiar to one individual.

Dr. Fones was thus forced back to the idea of successful resistance in some teeth to attack from without and failure in other teeth under similar attack. Naturally his thought turned to a subject upon which he had already done much important work, some of which will be described in the next article—the matter of nutrition. If it could be shown that the food of the men whose teeth successfully resisted attack was fundamentally different from the food of the men whose teeth succumbed, an important addition to knowledge would be made.

He established the existence of such a fundamental difference in food. The Italians had been born in Italy and had grown up on the Italian diet, which is composed mostly of fresh fruit, green vegetables and hard bread, with but little meat and no pastry, or had been born soon after the family reached this side and before the food was changed, or were members of families where the diet and manner of preparing food had never been changed. Of profound importance was the fact that none of them had been accustomed to the use of refined sugar, candy, ice cream, soda-water or pastry. They had no appetite for these things, and no sense of loss because of their lack.

Many of them liked garlic and onions, and the odors of these, often coupled with a lack of personal hygiene, were sometimes almost too much for the hygienists. But the garlic and onions and good physical resistance marched consistently hand in hand. Their consumption of sugar in all forms averaged about a teaspoonful a day a person, less than one-seventh of the average consumption by the Americans.

On the other hand, the other Europeans and Americans were accustomed to what has come to be called the *American diet*—cereals, meat,

potatoes, white bread, and the habitual use of a large amount of sugar as such or in the forms of candy, ice cream desserts, etc., with a minimum of fruit and vegetables.

These findings are likely to become more important in our minds as the years pass and our knowledge is increased. If we admit the evidence, they seem to point to the following conclusions:

(1) That uncleanliness of the mouth is not alone necessarily the cause of caries or disease of the soft tissues.

(2) That while the bacterial plaque may be the active cause of caries in mouths susceptible to that disease, the resistance in the teeth may be such as to render the plaques impotent. The dental plaque is by no means the whole story in the origin of dental caries.

(3) That a diet rich in fresh fruits and vegetables and hard food, and poor in sugar, starch and meat, followed for a long enough time, may establish immunity to caries, even under unhygienic conditions.

(4) That a diet rich in sugar, starch and meat and poor in fresh fruit, vegetables and hard food, if followed for a sufficient length of time, permits ready susceptibility to decay, even if it does not cause it.

(The Sixth Article will relate how Dr. Fones had begun, in 1915, to teach the school children some of the great truths so clearly supported by the evidence in the mouths of these soldier boys.)

Reminiscences—Mostly Anesthetic

By William Harper DeFord, D.D.S., M.D., Des Moines, Iowa

FIFTH ARTICLE

Having completed a five months' course at the New York Polyclinic, I returned to Washington, D. C., and was appointed an assistant in the office and in the public clinic of Dr. Swan M. Burnett, the foremost ophthalmologist of Washington at that time, and in addition conducted my own eye clinic three afternoons a week at the Woman's Hospital. I remained a year in Washington in order to perfect myself further in those branches and then returned to Iowa to practice eye, ear, nose and throat work.

I had been back in Iowa only a few days when I received a telegram from President Charles Schaeffer of Iowa State University requesting me to come to Iowa City for a conference. Here was a real thrill! What could it mean? Dr. A. O. Hunt, Dean of the College of Dentistry, met me at the train and said, "We will go to President Schaeffer's office. He wishes to have a talk with you." "Why me?" I asked. I ascertained that Dr. G. V. Black, who was teaching oral pathology and oral hygiene in the College of Dentistry, had just resigned in order to accept the deanship of Northwestern University College of Dentistry, and President Schaeffer, through Dean Hunt's recommendation, tendered me the position made vacant by Dr. Black's resignation. I told him that it would be impossible for me to accept, as I did not feel qualified to succeed Dr. Black, and besides I had just prepared myself to practice a specialty of medicine rather than dentistry. They advised me to go back home and give the matter careful consideration. In just two weeks from the day of that interview I stood before the students for my first lecture and thus got back into dentistry again.

The schedule that was arranged for me required three one-hour lectures a week and one afternoon in the clinic, and, in order to meet this requirement, I moved to Cedar Rapids, Iowa, only thirty miles from the University, with excellent train connection.

The dental faculty of the State University of Iowa at the time I was invited to become a member consisted of a number of eminent, progressive men, and it is remarkable that nine members of that faculty became heads of some dental school—G. V. Black, Northwestern University; W. X. Sudduth, University of Minnesota; W. P. Dickinson, University of Minnesota; Dr. Ingersoll, Keokuk Dental College; A. O. Hunt, Omaha Dental College; W. S. Hosford and Frank T. Breene, Iowa State University; Dr. Starbuck, Superintendent of the Denver Dental College; and the writer, Dean of Drake University College of Dentistry, Des Moines, Iowa.

One day, at my office in Cedar Rapids—I think this was in 1892—I was operating on a nervous, high-strung patient when the office door opened and in came a traveling dental salesman whom I knew quite well, so I invited him into my operating room. The patient was one of those with teeth so sensitive that every time a tooth was touched with an excavator or bur her hands went up into the air and she would break down and cry because of the pain inflicted, so I resorted to the chloroform bottle and prepared two or three cavities to my satisfaction without further demonstration on her part. After the patient had been dismissed, the salesman asked me if I knew Dr. Hewett of Chicago, saying that he used chloroform for every operation he performed. This was a knock-out for me, for at that time I thought I was the only one who was using chloroform for dental operations other than extracting teeth. It was only a night's ride from Cedar Rapids to Chicago, so I boarded a train the following Saturday night and spent Sunday with Dr. Hewett. Although more than double my age, he treated me with much consideration, and I certainly had my eyes opened that day and learned many things new to me. He treated me so kindly and urged me so earnestly that I made frequent visits to his office, returning to my practice filled with enthusiasm.

In regard to himself, Dr. Hewett told me the following incidents. Briefly stated, he was a medical student at the time Sir James Y. Simpson of London made public his discovery (1846) that chloroform possessed anesthetic properties. He became very much interested in this discovery as reported in the medical journals and sent to London and procured a small amount of chloroform. At the time the chloroform arrived he was suffering from an abscessed lower molar. He took a few inhalations of chloroform and proceeded to evacuate the pus. He pressed a lance into his gum without any sensation whatsoever. Upon removing the lance he was amazed, for the stain on the blade indicated that it had passed a quarter of an inch into the tissue. He then took forceps and, adjusting them to his tooth, made careful lateral movements painlessly! Thus encouraged he extracted his own tooth without discomfort. For a period of thirty years he practiced medicine and surgery in Eastern Michigan, performing the usual operations of that day in a stage of *obtundure,* as he called it, the word *analgesia* at that time being unknown. After a period of thirty years of surgical practice, realizing the great advantage anesthetics would be to dentistry, he abandoned medicine and opened a dental office in Chicago, using chloroform for all dental operations. It would be interesting to know the exact time that Dr. Hewett opened his Chicago dental office and employed chloroform so universally, but that I do not know.

In May, 1893, Dr. Hewett read a paper before the Iowa State Dental Society which made a profound impression, and although this society

had previously put itself on record as condemning the use of chloroform by dentists or for dental purposes at the annual 1894 meeting, a committee was appointed to visit Dr. Hewett at his office, investigate his method, learn what they could and report at the next annual meeting. The writer of this article was made chairman of that committee and wrote the report, which was read at the 1895 annual meeting, and Dr. Hewett was present, contributing another paper and conducting a clinic.

"On the morning of July 17th, at 9:00 A. M., as had been agreed, the committee met at the Palmer House and proceeded to the office of Dr. A. C. Hewett, 491 Adams Street, Chicago. We found Dr. Hewett, his assistants, and a number of patients awaiting our arrival. The committee had placed in Dr. Hewett's hands, a month or more in advance, a list of operations they wished to have him perform covering the entire field of operative dentistry. When we arrived, Dr. Hewett extended to the members of the committee the privilege of bringing to his office whom they wished and designating the operation to be performed. Furthermore, the members of the committee were not only invited but urged to perform the operations themselves while he administered the chloroform and designated the time to operate."

The committee spent three days with Dr. Hewett and saw upward of a hundred operations. This report is entirely too lengthy to reprint in this article, but can be found in the transactions of the Iowa State Dental Society for 1896. The last paragraph of the report reads as follows:

"We believe that a chair of anesthesia should be established in every dental school, in order that anesthesia, both local and general, may be scientifically studied and taught; that the resolution on the records of this society opposing the use of chloroform in dental practice be declared null and void; that the dental profession at large, as well as this Society, owes a debt of gratitude and a vote of thanks to Dr. A. C. Hewett; that the Iowa State Dental Society is indebted to Dr. Hewett for papers and addresses on this subject on previous occasions, and especially for the hearty, hospitable manner in which he received the committee which you sent to Chicago to make the investigation set forth in this report.

(Signed) W. H. DeFord,
Geo. W. Miller,
L. K. Fullerton."

I had been employing nitrous oxid and chloroform vapor a number of years for operations on the teeth other than extracting, but only occasionally when cavities were so sensitive or painful that it was impossible to make a cavity preparation that would retain a filling, but Dr. Hewett was using chloroform on the average of twenty times a day. At

first he employed chloroform only for hypersensitive dentin, but later, as soon as the patient became nervous or restless, he resorted to chloroform as a time-saver and would prepare several cavities in the same time usually consumed in preparing a single one.

It seems almost unbelievable, and I hesitate to mention it, but many times I have seen him sink a large fast-revolving dental bur into the pulp chamber of a live pulp and amputate the bulbous portion of the pulp, leaving the root portions undisturbed in teeth in which caries had extended to such a depth that the pulps would probably die under a filling. After profuse bleeding he flooded the pulp chamber with oil of eucalyptus, capped it with tin-foil and then filled the cavity with cement, completing the operation from three months to a year later. He summoned a number of patients to his office so that the committee might see teeth that had been treated in this manner from one to three years previously. These teeth responded to the thermal test and showed no discoloration. Eighteen inhalations of chloroform were the most I ever saw him administer in any case, and the amount of chloroform involved was not more than half a teaspoonful.

15 Rawson Block.

(*To be continued*).

[PROFESSIONAL DUTY]

To sum up the duty of our profession to the public in a single sentence: Let the attitude of the dentist to his patients, whether in private practice or in public service, be such as to most surely safeguard not only their physical well-being, but also their moral and mental responsibility. Nothing short of this should be dignified by the name of professional service; and the fulfilment of all this may well constitute the highest expression of one man's bounden duty to another.

—C. N. JOHNSON.

Oral Surgery In Practice

By James L. Zemsky, D.D.S., New York, N. Y.

Attending Surgeon, Department of Oral Surgery; Chief of Clinic and Director, Surgical Periodontia Department, Midtown Hospital, New York

(*Continued from April*)

CYSTS

¶239. In operating upon multilocular cysts it is very important to curettage thoroughly in order that each and every cell or pocket may be eradicated. It is advisable to remove as much of the overhanging bone as possible and thereby shallow out the cavity and thus enhance its healing. (See Figs. 235-247.)

Fig. 235

ADAMANTINOMA OR MULTILOCULAR CYST

Photograph of a patient, 20 years of age, presenting a marked swelling of the lower part of the face and the chin. There is no glandular enlargement. The history indicates that the swelling became noticeable about six years ago and gradually increased in size. There was no pain at any time. In pressing upon the swelling a parchmentlike sensation could be elicited.

Intraorally, the floor of the mouth was raised to the level of the necks of the teeth, presenting a flat, hard, crackling surface, and the labial fold was completely obliterated by the bulging bone. The left canine and premolars were missing, and when pressure was exerted upon the gums in this region, distinct fluctuation was felt. Roentgenographic examination revealed the condition shown in Figs. 236-238. (See ¶246-248.)

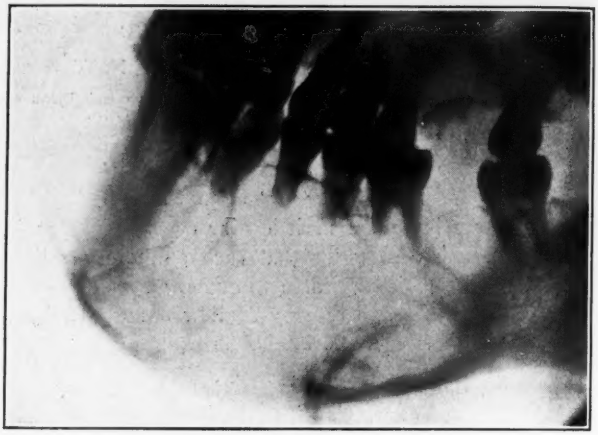


Fig. 236

Roentgenogram taken in a lateral position of the left mandible of the patient shown in Fig. 235.

This reveals loss of bony structure anterior to the third molar and involving the entire bone of the mandible. The roots of the teeth show resorption. Septa of bone are seen running in various directions, thus dividing the cyst into many compartments. The lower border of the mandible is completely destroyed in the region anterior to the second premolar. (See Figs. 235-244; also, ¶246-248.)

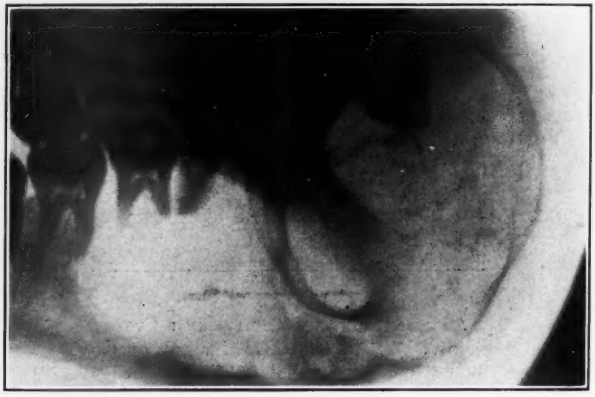


Fig. 237

Roentgenogram taken in a lateral position of the right mandible of the patient shown in Fig. 235.

This reveals loss of bone structure anterior to the second molar and involving the entire body of the mandible. The roots of the first molar and premolar show resorption. A large number of septa are seen in the anterior portion of the disfigured mandible running in all directions, thus dividing the cyst into many chambers irregular in size and shape and forming a multilocular cyst. (See Figs. 235-244; also, ¶246-248.)

Fig. 238

Roentgenogram of the mandible of the patient shown in Fig 235 taken by placing the film under the jaw and directing the rays downward through the mandible. The numerous separate cells can be clearly distinguished, making the diagnosis of a multilocular cyst certain. (See Figs. 235-244; also, ¶246-248.)

Fig. 239

Photograph showing the intra-oral condition of the same patient as in Fig. 235 after completion of the first stage of the operation (extraction and drainage). Notice the bulging of the labial plate at the symphysis and the flat appearance of the lingual aspect of the mandible. Laterally are seen the open cystic cavities, which are packed with iodoform gauze for drainage purposes. (See Figs. 235-244; also, ¶246-248.)

Fig. 240

Photograph of the mouth of the patient shown in Fig. 235. This was taken four months after the second step of the operation was performed, which consisted of a thorough curettage of the cystic membrane and breaking through the septal bone.

The general appearance of the cavity is of a healthy and normal structure, the only exception being in the regions of the right canine and premolars and the right central and lateral, which presented small areas of unhealthy granulation. A specimen of this tissue, as shown in Fig. 241, revealed nothing different from that taken on previous occasions, namely, adamantinoma. By this time the bone had considerably regenerated and the patient had acquired a normal appearance. (See Fig. 242.) Because it was believed that radium might prove of considerable benefit in destroying the granulating areas, the patient was subjected to this therapy, with the result as shown in Figs. 243-244.

Fig. 241

Microphotograph of a specimen removed from the granulating areas shown in Fig. 240 (marked by arrow). (See Figs. 235-244; also, ¶246-248.)

Fig. 242

Photograph of the patient shown in Fig. 235 taken eight months after the second step of the operation. Notice the marked reduction of the swelling. The crackling of the bone upon pressure that was felt before the case was treated has disappeared and the structures have become quite hard.

Note that there is not the slightest indication of glandular involvement. (See Figs. 235-244; also, ¶246-248.)

Fig. 243

Photograph of the patient shown in Figs. 235 and 242 taken three months after the patient received his radium treatments, subsequent to which the symphysis became sequestrated. Outside of the deformity due to loss of chin the patient does not complain of anything. There is no sign of glandular involvement.

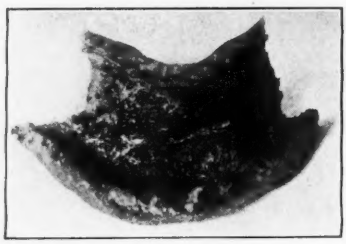


Fig. 244

Photograph of the sequestrum from the patient shown in Figs. 235, 242-243. (See Figs. 235-244; also, ¶246-248.)

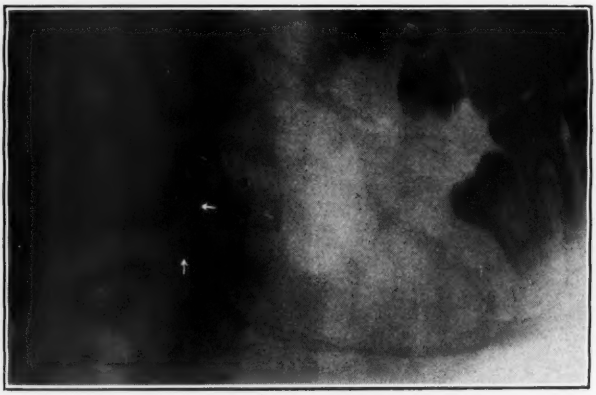


Fig. 245

FOLLICULAR-MULTILOCULAR CYST OF THE MANDIBLE

Roentgenogram of the left mandible of a patient, 14 years old, showing a mere outline of the body of the mandible and of the ramus. No bony structure is seen. Within this, faintly outlined, is seen an erupting second molar, which is situated close to the first molar, and pressed against the posterior wall of the ramus is the bud of a wisdom tooth (marked by arrow). (See Fig. 246.) From this roentgenogram a tentative diagnosis of a follicular cyst was made. The operative findings, as shown in Figs. 246-247, confirmed the diagnosis. (See ¶239 and ¶248.)

Fig. 246

Roentgenogram of the specimen removed from the mandible of the same patient as in Fig. 245. This shows the bud of the wisdom tooth (1) and the second molar with its crown completely embedded in the cyst sac (2).

Fig. 247

Photograph of the same specimen as in Fig. 246. This view of the cyst clearly reveals the separate lobes containing the cystic fluid. The crown of the molar is seen to be embedded with the cystic capsule (1). (See ¶239 and ¶248.)

(*To be continued*)

Porcelain Manipulation

A Practical Technic for the General Practitioner

By F. R. Felcher, D.D.S., Chicago, Ill.

XIV

Shades

This subject requires considerable attention, as there are many vital factors that control or interfere with obtaining and maintaining shades. From the start, where the shade of the tooth of the patient is taken, to the finished production of that shade the various conditions that may tend to influence the maintenance of the shade are many.

The blending of shades, as is necessary with some porcelains on the market at the present time, the laying of colors, such as the foundation or dentinal color, and the incisal or enamel color must be considered.

There is also the effect of burning or firing the porcelain which, if improperly handled, may tend to interfere with the expected result, such as the burning out of the colors and the loss of the desired shade.

In order to explain these conditions and to offer suggestions that will aid in the avoidance of difficulties that ordinarily arise where this subject is not quite fully understood, an effort will be made to take each factor into consideration under separate headings.

Colors of Teeth Generally Considered

A study of the average shades used by the author and taken mainly from the tooth shade guide of The Dentists' Supply Company shows the following:

Shades Nos. 4, 5, 7, 8, 16, 20 and 21 as predominating among blonds—fair hair and complexions and light colors in the eyes. Shades 6, 9, 15 for brunettes—dark hair, complexions and eyes.

In the first group will be found oranges, yellows and grays, and in the last group will be found the gray predominating, except shade 15, which has a pink tint. Occasional variations of these colors will be found, not only the variations of color characteristics such as are found in the teeth in different parts of the mouth—cuspids, bicuspids and molars, which have deeper body colors, with lighter colors in the laterals—but also tints of pink, gray or blue presenting themselves as transparent portions of the teeth, especially in the incisal portions of some incisors.

Together with color, contour is a very vital factor and must be considered. The author considers color secondary to contour, although the reproduction of both is the goal to be obtained.

We may read of colors both spectral and pigmental and, pertaining

to dental porcelains, confuse ourselves to a degree, because we deal with colors that are given to porcelains through metal oxids. A blend of yellow and blue-violet by means of the spectrum gives a white, while a mix of yellow and blue pigments gives green. In porcelains colors may be modified by other shades of porcelains, but the main factor is the blended effect by the overlaying of colors (Fig. 55).

While nature delicately shades the teeth in harmony with surrounding color conditions, teeth of a contour in harmony with the individual are necessary for a fine effect. Under certain conditions the colors may vary slightly, but if the contour and proportions are right, a pleasing harmony will exist in the mouth.

Herein lies the plea for a better understanding of tooth form, so that in replacing lost teeth the use of porcelains on a larger scale than at present will improve dentistry as an art.

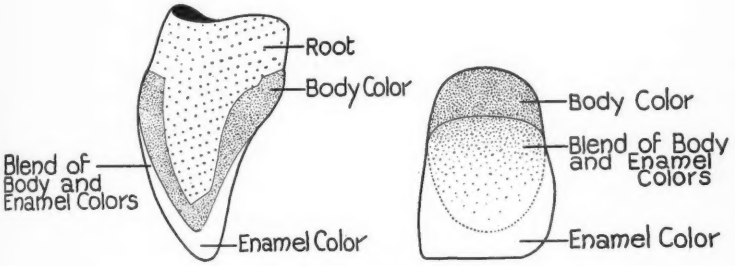


Fig. 55
Blended effect by the overlaying of colors.

In preparing to take the shade of a tooth, study the color of the hair, eyes and the complexion. In women patients the lips should be free from tints such as rouged lips present. The teeth should be as clean as possible.

Good light is very essential for the selection of shades. Daylight is the best, of course, and should be used wherever possible. Some artificial lights in use at present are excellent, but they must be considered as inferior when compared to clear daylight.

As much attention as possible should be put on the study of the character or type of the teeth in the mouth. Make a note of the stains, if there are any, or of color casts such as incisal transparencies, decalcified enamel, etc., and in the impression of the mouth, if for a jacket crown, every effort should be made to obtain the contour of the teeth in detail.

Since a smooth surface tends to reflect light, especially so when covered with saliva, as is found on the teeth in the mouth, it is advisable to have in slight form developmental grooves or transverse ridges, which will tend to diffuse the light rays instead of reflecting them. This will prevent the conspicuous appearance of the tooth.

Color Blending

As before stated, where porcelains are used, porcelains are blended rather than mixed. Of three manufacturers of porcelains now commonly in use two supply definite combinations of shades which, when blended by overlaying, will produce duplicates of their own shade guides, while one manufactures a large variety of colors which the operator often is required to mix in order to get the required shades.

If the foundation or dentinal color is applied lightly over a matrix and a heavier incisal color blended over that, the general appearance of the finished product will present a tooth of a lighter shade. Likewise a heavier layer of dentinal color will produce a darker shade. In this way we are able to obtain the variations of the given shades of teeth found in various portions of the mouth. Cuspids, for example, are usually predominant in dentinal color and are therefore built with a deeper layer of yellow than laterals, which are almost always of a lighter shade than the rest of the teeth.

Failure to observe the proper placing of dentinal color as above mentioned will tend to throw a tooth decidedly off color. It is advisable to note the application of the colors as applied to the shade guide of the manufacturer, modifying the application of the dentinal color to correspond with the tooth that is being reproduced.

In modifying shades it is well to mix the porcelain powders thoroughly either by the use of an agate mortar and pestle or by putting the proportions in a small glass jar and thoroughly shaking until the powders are properly mixed.

As stated before, color-overlaying gives a different effect from that obtained by mixing porcelains. Many years ago the author, in proving up a suggestion, made a considerable number of jacket crowns, using a light yellow for the foundation color, overlaying that with a layer of light gray and overlaying that in turn with a slightly greenish gray. This color had a tendency, when properly contoured, to harmonize in most mouths. Yet the last two colors, when mixed, gave an entirely different shade, which could not be used. In his own practice the writer has made use of the Twentieth Century and Justi shades almost exclusively, and submits the following chart, which will be of great value in blending colors to produce shades.

Comparative Chart of Manufacturers' Shades

Twentieth Century	Justi	S. S. White Old	S. S. White New
4 or 1	1	34	8L
4 or L5	1D	35	8-9
4D or L Yellow	2	36L	11L
8	3	36	11
7	4	37	12
16 or L20	5	41	15
20 or L21	6D	42	15D
2	8	27	1
3	9	30	5
3 or Blue 15	10	30D	5
13	11	31	6
14	11D	32	7
14D (very dark 15)	12	32	7
6	13	39	13
9	13D	38	10
9 or L15	14	38	16
15D	14D	40L	19
15	15	40L	17
11 (15-13)	16	31	18
15D or 14	17-14D	40	19
21	18 or 6-D	43	6 or 7
10	19	28	2 or 9
11 Yellow 9	20	44	12 or 20
10	21	45-46	20
22	22	47	7
23	23	48	7
24-25	24	49 (50)	7

The Effect of Firing on Shades

In the firing of porcelain bodies many operators who are not entirely conversant with the effect of heat on the coloring materials incorporated in the porcelain find that the colors seem to disappear, and they are at a loss to understand the condition. In fusing porcelain at a high temperature colors are more easily destroyed than when porcelain is time-baked or matured. Some porcelains of the high-fusing type may have a shrinkage range extending from 1900° to 2350° F., while others may have a shrinkage range extending to 2400° F. By fusing at a temperature that does not exceed either of the two temperatures mentioned and extending the time over a period sufficient to fuse the porcelain

properly at that temperature, greater protection of the colors will be secured and denser and stronger porcelain will be obtained.

It is also advisable, after placing the built-up porcelain in the furnace, that the door of the muffler be left slightly open. This enables the gases to escape that are formed by the burning out of the vegetable binder which is found in all dental porcelains. This is unually determined by the white appearance of the porcelain shortly after it has been placed in the muffle. This subject will be gone into detail thoroughly in the following chapter on *Firing.*

7616 Phillips Avenue.

(*To be continued*)

Jacob C. Schwartz

As this issue goes to press, we learn with sincere regret of the passing of Mr. Jacob C. Schwartz, President of the Berry Dental Laboratory of St. Louis, on April 14th, 1928. "Jake," as his host of friends affectionately called him, was a protégé of Dr. Walter M. Berry, former head of the laboratory bearing his name, and when Dr. Berry resumed private practice he turned over the firm to Mr. Schwartz, who conducted the laboratory on a high scale and with marked success until his untimely death.

Only two weeks before his passing, Mr. Schwartz established a trust fund of $15,000 to be used by the St. Louis Dental Society to bring prominent lecturers and clinicians to St. Louis. The entire sum will now be turned over to the Society.

In the passing of Jacob C. Schwartz the profession in the Middle West has lost the progressive and beneficent influence of a fine personality, and the laboratory association a member who did much to elevate his chosen calling, and one who appreciated the importance of cooperation between the dentist and the laboratory, and who, by precept and example, honored his friends in both groups.

Mr. Schwartz was 39 years old. He leaves a widow, a son, Robert, his mother, two sisters and two brothers, Eli P. and Louis Schwartz.

The Radiogram As An Aid In the Diagnosis of Early Dental and Periodontal Disease*

By John Oppie McCall, D.D.S., F.A.A.P., F.A.C.D.

A SUMMARY

Radiograms have been used for some time in the diagnosis of incipient caries and periodontoclasia. Raper developed the former with his bite-wing film, and Box has given a very definite description of the latter.

Raper's book is well worth reading, first, because it tells how the radiogram may be utilized by the profession and, secondly, because of the technic it teaches. It is evident that only too few practitioners use the radiogram as a routine procedure. The expense is by no means prohibitive, especially when the five-film interproximal series is used alone. This method will also disclose most of the incipient periodontal lesions.

The radiogram is necessary for the early detection of approximal caries. The fact that many of the films will be of negative value should not be a cause for embarrassment, since the radiogram is used simply as another explorer.

All new patients should have this examination and from it the mouth should be classified as immune or susceptible. If it is the former, probably a yearly examination will be all that is necessary; if it is the latter, only a six-months' interval should be allowed to elapse.

In taking the radiograms the central ray should pass nearly horizontally through the crowns of the teeth, so that the shadows of the approximating teeth will not overlap.

Early approximal caries is indicated by a dark spot in the light shadow indicating the enamel of the tooth. The earliest decalcification that will show on a film is in reality a fairly large lesion and calls for immediate interference.

Early periodontal disease, when it is confined to the marginal and cemental gingiva, is not shown in the radiogram, but may be detected by an oral examination. However, involvement of the pericementum and alveolar bone will be registered. Pericementitis is shown by a distinct black line and consequently is not to be confused with periodontal disease unless the latter has reached an advanced stage. Early periodontal disease produces only a localized thickening of the membrane, generally near the alveolar crest. This is the rarefying pericementosis fibrosa of Box. Only occasionally is it seen near the apex of the root.

* The entire paper was read before the Preventive Dentistry Section, First District Dental Society, New York, January 11, 1928.

The other type of early periodontal disease that can be detected by the radiogram is the resorption of the crest of the alveolar process. It may appear as a change in the outline of the crest or simply as an abnormal radiolucence of the bone. From cuspid to cuspid, when the teeth are in normal contact, the crest should be pointed and extend to within 2 or 3 mm. of the enamel-cemental line. In the bicuspid and molar region the crest is practically at right angles to the long axis of the teeth and the same distance from the enamel-cemental line as in the incisor region.

Early crest resorption is shown by the rounding of the points in the incisor region or by a convexity in the posterior region. Rarefaction, usually accompanied by some change in outline, is very common and indicates the beginning of alveolar destruction.

Certain findings in the case of erupting and recently erupted teeth should be noted. They probably denote an abnormal, if not a diseased, condition. They may indicate a deficiency in bone formation. Before the deciduous molar is lost, the crown of the bicuspid is surrounded by a dark halo beyond which there is dense bone. At the end of the unformed root there is another halo. Also in recently erupted teeth there are often seen heavily marked pericemental lines which extend around the entire root. Dr. McCall is satisfied that this denotes an abnormal condition, that the closest attention should be given to the harmonizing of the occlusion, and that diet, elimination and other health factors are above par.

Teeth undergoing orthodontic treatment will exhibit similar conditions, but in that case they should not be interpreted as abnormal.

By not using the radiogram as a routine part of examination the dental profession is allowing many dental and periodontal lesions to develop to serious proportions before their discovery. The responsibility for this rests squarely on the shoulders of the dentist.

A Study of Root Canal Fillings

An interesting study has been made by J. R. Blayney, M.S., D.D.S., as to the success that has been attained by the general practitioner in the treatment and filling of the root canals of pulpless teeth. One thousand patients were taken as they applied for admission to the Infirmary of the College of Dentistry, University of Illinois. Over half or 56.3% of this number had one or more apical involvements with a total of 1308 infected teeth.

Twenty-two hundred and ninety-one teeth had root canal fillings, and of this number 724 had apical involvements or 31.6%, while 1567

had normal root ends. Strange to say, the number of teeth having apical involvements and no root canal fillings was only 584 or 2.2%.

Only 15% of the teeth had good root fillings, and of these 86.4% were healthy. 3.4% of the filled teeth were overfilled and they were about evenly divided as to the condition of the root ends. 81.5% of the filled teeth were underfilled and of these 65.7% had healthy root ends. This would seem to indicate that it is better to underfill than to overfill a root canal.

35.2% of the teeth having root canal fillings were molars, and of them 70.7% had healthy root ends. 34.8% were bicuspids, with 67.2% having healthy apical areas. 30% were anteriors, of which 62.2% were healthy. This would lead us to believe that the hardest teeth to treat show the largest percentage of success, but, as Dr. Blayney states, this may be partly due to the fact that this region is the most difficult for radiographic study.

In a series of 365 cases which showed chronic infection, and which were treated by members of the third and fourth year classes at the University of Illinois, 737 canals were cared for and 73.73% of them showed regeneration of apical tissue or a marked improvement. 75.2% of the treated molars were benefited, 69.2% of the bicuspids, and 75.5% of the anteriors.

From these figures Dr. Blayney draws the conclusion that the case of the pulpless tooth is by no means hopeless, and that with knowledge and care even better results may be obtained.

An Unusual Treatment For An Unusual Case

By G. Ralph Collins, D.D.S., Vermillion, S.D.

A young man, twenty years of age, reported to me complaining of soreness and looseness in his superior right lateral. This patient gave a history of having been struck under the chin nearly four weeks previously, at which time the central and lateral on the superior right side were loosened by the impact of the teeth being snapped together.

At the time of his reporting at my office the central had apparently recovered from the accident. However, the lateral was still extremely sore to touch. The pulp-tester revealed a putrescent condition of the pulp. X-ray examination showed a fracture at the end of the tooth, with the labial aspect of the fracture some two or three millimeters below the gingival margin and the lingual at about the gum line. Thus

Fig. 1

you will note that there was enough tissue attached to the labial to keep the crown in place, although it was completely fractured from the root (Fig. 1).

After administering block anesthesia, I removed the crown and found the fracture to be very jagged in outline. I reasoned that by the time I had prepared this root for the placing of any type of crown it would have gone far up into the tissues. I observed also that I could replace the crown on the jagged root-end successfully. Thereafter I proceeded as usual in placing a root-canal filling (Fig. 2).

The next step was to fit a clasp metal pin to the pulp chamber and root, allowing a slight play so that upon cementing the pin into the pulp chamber and placing it in position on the root-end the pin would adjust itself to the correct position and the cement would hold it there. As soon as the cement had set, I could then remove the crown and pin in their correct relationship. To finish the operation was simply a

Fig. 2

matter of cementing the pin and crown in place on the root. Fig. 3 shows this last step taken immediately after cementing and before removing excess cement.

This patient is thus wearing his original tooth, which would have been difficult to match in shape and color, and which if extracted would have necessitated the cutting down of two unblemished teeth to bridge the space. As the soreness has left the tooth and the tissues seem to be

Fig. 3

in a healthy condition, I feel that my operation has been a success, not only from the dental standpoint but from that of my patient. As much as we regret the devitalized tooth problem, I think this is one of the exceptional cases which can well stand the sanction of the dental profession today.

2 Main Street West.

Togo's "Discursions"

Mr. Editor of Magazine Devoted to Dental Uplift and Other Educational By-Products.

Hon. Sir:

As frequently observed by myself and other Emaciated Philosophers, Man are peculiar insect, being distinguished by Intelligence Department which is seldom capable of applying 50% of available Horse Power to any problem calling for real thought and reasoning ability.

Consider instructive case of Hon. Average Patient requiring artificial Denture Service on both upper and basement floors. Does said victim of Edentulous Disaster trustfully place entirely toothless gums in hands of capable D.D.S. who has made life study of problems resulting from interior facial baldness and then gladly accept and promptly pay for resulting improvement of personal countenance? Not so, but far otherwise as R. Kipling so feelingly remarks under different circumstances. At Opening Overture of Denture Obsequies Hon. Patient usually performs oration similar to following: "Please Hon. Doctor bear in mind important fact that teeth formerly possessed by myself as Sole Owner and manager were of beautiful appearances resembling new fallen snow in color and slightly undernourished grains of rice in size. Please construct new chewers on lines of original equipment though perhaps slight reduction in size of front teeth might prove desirable and somewhat enhance otherwise perfect facial effect."

Suffering D.D.S. who has perhaps heard identical record played 672 times by patients from every walk and several by-paths of Life is sadly tempted to retire to seclusion of laboratory and sustain failing morale by sundry snorts of Hair Tonic before entering modest professional demurrer and explaining that while original tooth equipment was undoubtedly of Unbelievable Beauty as just mentioned, nevertheless sundry items, including somewhat advanced age, evidences of mechanical wear, annual depreciation, etc., should be thoughtfully considered and net results of survey included in designing and installing new equipment supposed to be harmonious and capable of withstanding Public Scrutiny in late afternoon of Life, while making favorable impression on friends or other etc. whether encountered by day or other suitable illumination. "Original edition of teeth was small, white, and very beautiful" is complete comeback from Patient after Hon. D.D.S. has concluded Solo Number along lines above mentioned.

Denture construction thus frequently becomes desperate contest between misguided Patient apparently in state of fixed delusion regarding Previous Pulchritude and conscientious Dentist confronted with

problem of making living and artificial dentures in one operation if possible. Large majority of such battles are usually won by side controlling Pay Envelope—in which particular they resemble final results noted in sundry other Human Conflicts—Patient presently emerges with No. 2½ teeth coyly peering out from No. 8 face while disheartened and disgusted D.D.S. wonders why he ever became a professional man instead of entering bricklaying, a Ford employee, or other branch of intelligentsia too numerous to mention!

Phenomena here noted Mr. Editor have long troubled all conscientious Denture Makers and explanations are possibly in order and key to solution may be deciphered in contingent occurrences in other departments of age problems occurring elsewhere.

Ladies who enjoyed beautiful lustrous yellow hair in sufficiently remote hours of Happy Childhood Days presently achieve dead straw effect in later adult life by means of Drug Store assistance, which deceives and pleases no one except themselves. Square-rigged gentleman of rather forbidding and dangerous appearance proceeds to dye greying and overgrown moustache until jet black and unnatural appearance can be plainly noticed at distance of 1½ blocks even on days of low visibility. Members of both sexes when confronted by annoying personal problems of Cranial Denudation proceed to conceal occipital desert wastes under hirsute creations of perfection and glossy symmetry resembling results which might be expected from free application of Pratt & Lambert's 61 Floor varnish if used as Hair Dressing!

Foregoing facts being largely as noted, brain thoughts arising in Japanese Intelligence are greatly condensed to read as follows:

Stigmata of old age and appearances of Senility are dreaded by nearly all forms of Human Beings—as years actually advance such dreads become more powerful and loss of reasonable control and balanced judgment is unfortunately very common occurrence in all but small minority of persons. Doctor of D.D.S. being usually well trained and really capable of applying benefits of life-long study to genuinely artistic solution of problems of tooth installation becomes deeply grieved and disappointed when obliged utterly to violate best professional judgment and artistic sensibilities in order to collect fees and continue to enjoy two eggs for breakfast whenever necessary or desirable.

Similar deterrent forces do not exist in case of Hon. Druggist to whose ear is carried merry tinkle of Cash Register while ambidextrously dealing out Hair Bleach or Bromo Seltzer!

Wig makers are presumably able to justify horrible results and live happily in spite of misspent lives; but practically all dentists experience deep and bitter disappointment when obliged to do battle with Old Age Fears as so frequently found to exist; therefore Hon.

Dentist when engaged in this branch of Professional Activity runs heavy chances of being Decidedly Out of Luck—and should see that fees, braking equipment and general control are adjusted to stand all possible strains.

Hoping you are the same,

Yours considerably,

TOGO.

[QUALITIES FOR SUCCESSFUL RESEARCH]

All great research is the product of minds that brood over facts that have been collected and suitably arranged, in the hope that the solution of problems on which they may bear may occur to the intellect, and that ideas for further observational or experimental work may be aroused that will either corroborate or refute such tentative hypotheses of solution as may be entertained. But the intellect and the imagination must be of a sufficiently high order and must be rigorously disciplined if reliable results are to be gained.

—BARKER.

DIGESTS

THE PROBLEM OF PAIN AND SHOCK IN DENTAL OPERATIONS

By B. H. Harms, D.D.S.

The human body is made up of cells that have definite and special functions, and the cell membrane is permeable and selective. All nutriment and waste must pass through this membrane. Even in severe acidosis the blood and body fluids are always slightly alkaline. This alkaline balance is maintained by the sodium, calcium, potassium and magnesium salts.

Acidosis means a depletion of these salts and is found most frequently in diabetes, but may be produced also by nephritis, starvation, infection, or mental fear and worry. This disturbs the permeability of the cell membrane. A patient suffering from acidosis lacks the normal will and muscular power to cooperate.

The promiscuous use of preanesthetic drugs without first ascertaining the state of the kidneys is dangerous, for the administration of morphin, atrophin, chloroform, ether or alcohol may bring about a complete suppression of the urine and, in a diabetic patient, a fatal coma.

Preanesthetic drugs and anesthetics plus an operative procedure tend to increase an existing acidosis to the point where none of the cells can function properly. Furthermore, the combining power of hemoglobin with oxygen is greatly decreased when the contents of the suprarenal glands are exhausted, and fright is one of the greatest agents producing the exhaustion of suprarenalin.

Some of the causes of shock are fear, trauma, exposure, infection, starvation, hemorrhage, anesthetics, and pain. It is characterized by (1) low arterial pressure, (2) concentration of corpuscles in the capillaries, (3) fall in body temperature together with a fall in blood pressure, (4) reduction of the alkali reserve, (5) damage to the circulatory control when the low pressure has lasted a long time, (6) a marked sensitiveness to ether or chloroform anesthesia, which dangerously reduces the already low blood pressure, (7) tolerance of nitrous oxid and oxygen as an anesthetic.

But in spite of all this we do not know much about the mechanism of shock. A man suffering from shock is unable to transform potential energy into the form of heat, motion and mental action, although all his organs are anatomically intact.

The acidosis caused by anesthesia and operation can best be combated by the use of alkali and sugar. Bicarbonate of soda and glucose are the commonest substances given. Nitrous-oxid-oxygen anesthesia is indicated in those conditions which are the gravest risk for operation. —*The American Dental Surgeon,* March, 1928.

DENTAL DEFICIENCIES

By Cecil Pincus, L.D.S., B.D.Sc.

Dentistry is the result of abnormalities due to the advance of civilization. Caries is almost universal and is also accompanied by other physical abnormalities. It would be impossible to enforce the prohibition of alcohol or tobacco and consequently there is little chance that a nation will change its dietary habits, though it has been proved that a proper diet will materially lessen the incidence of caries.

These are natural dental deficiencies, but there are also those of an artificial character that are created by dentists. A correct restoration is one that restores the original contour of the tooth with no overhanging margins. A restoration is either correct or faulty; there is no half-way course. In other walks of life, such as engineering, when faulty work may endanger life, the work is supervised. There is nothing of this in dentistry, though the health of thousands of people is being endangered by poor work.

Thirty years ago the prospective dentist was obliged to have mechanical skill, but now he is coached and carried along by instructors with the result that the tendency is toward mediocrity rather than excellence as far as technical ability is concerned. Another reason for the failure to do better work is the refusal of the public to appreciate the necessity of paying more for superior service.

The majority of dentists would prefer to do their work up to a standard rather than down to a price, but under present conditions it seems impossible. The public must be educated by the dentists as to the advantages of better work.—*The Australian Journal of Dentistry,* January, 1928.

COMPARISON OF BONE STRUCTURE UNDER MOVABLE AND NON-MOVABLE RESTORATIONS

By S. Marshall Weaver, D.D.S.

When teeth support bridges, the tissue surrounding them is characterized by increased density and close spacing of the trabeculae of the alveolar process. This also appears under partial and full dentures

and is rarely due to infection or inflammation but to physiologic stimulation.

A single remaining tooth that is called upon to bear all the strain of mastication generally shows a condensation of the surrounding trabeculae, while teeth that are not in active use are held by less dense bone.

Histologically the alveolar plates have the same characteristics as bone in other parts of the body and are being constantly changed and rebuilt to meet new conditions.

When surgical intervention takes place, only the removal of spicules and the elimination of undercuts are necessary as a rule. The flaps are then brought together and not sutured too tight. Proper suturing hastens healing, eliminates practically all after-pain and permits an earlier insertion of restorations. The sooner a restoration is put in place the better, because it hastens the deposition of bone. However, the sockets should first be healed to avoid the forcing of infection into the deeper parts. The stimulating pressure of a restoration is beneficial and its early insertion prevents excessive resorption. The greatest factor in producing atrophy is disuse.

Movable-removable bridgework, partial denture and full dentures are tissue stimulating restorations, while all fixed bridges are non-stimulating. Certain restorations, such as lateral incisors and some bicuspids, may safely be made stationary. Porcelain root-ends should never be inserted into the sockets because they interfere with the blood supply. —*The Dental Cosmos,* March, 1928.

MODIFICATIONS OF ORAL INCISIONS

By Joel M. Zametkin, D.D.S.

The most common oral surgical operations performed by the general practitioner are root amputations and alveolectomies. The incision generally advised is of the semilunar type with the convexity toward the gingival margin and, at the most, only two teeth in width.

A flap of this character has many defects. It makes the field of operation too small and requires constant manipulation to keep the mouth of the wound open. Since the flap is so narrow, the blood supply to it is limited and there is always the danger of sloughing. This applies also to the narrow band of tissue that is left on the gingival, and to which the flap is finally sutured.

The author prefers a straight-line incision, which is more likely to heal by first intention and with better results. The blood supply is more abundant and the agglutination is such that sutures play a relatively unimportant part.

For root amputations on the two central teeth the incision should be horizontal at the apices of the teeth, leaving a wide gingival band. The incision should extend to the cuspid teeth, curving slightly up to their apices. About one-eighth inch of the margin of the gingival band is freed with a blunt instrument, and at the end of the operation two large stay sutures are applied, one on either side of the frenum. This leaves an almost invisible scar high up on the gum.

In the surgical removal of roots and teeth the distal incision is made by placing the knife point just below the crest on the lingual side and bringing it over the crest and then down into the buccal fold. The mesial incision is made in the same manner. These incisions flare away from each other, leaving a very long base.

Three parallel horizontal incisions are now made, the first on the crest of the ridge running the full length, the second on the buccal alveolar plate low enough to be in correct proportion to the reduced area after operation, the third a mesio-distal incision on the lingual alveolar plate just above the terminations of the lingual incisions. The mucobuccal flap is raised, leaving three portions, one large, which is finally sutured into place, and two smaller ones, which are to be removed.

By this means an accurate, predetermined amount of tissue is cut off, the edges of the incisions are straight, and healing takes place readily. —*The International Journal of Orthodontia, Oral Surgery and Radiography,* February, 1928.

HISTOLOGICAL STUDIES ON METHODS AND FUNDAMENTALS IN ROOT-CANAL SURGERY

By Edward H. Hatton, B.L., M.D.

From histological studies it has been found that very often there is regeneration of tissue after the treatment of teeth, and that for many years there may be no evidence of infection, but nevertheless the average dentist cannot treat and fill root canals adequately. The x-ray does not always give reliable evidence as to the result of the treatment.

As a rule the root canals are very poorly treated and filled. The three chief faults are: (1) not all the pulp tissue is removed; (2) the root-canal filling is not brought near enough to the apex; (3) the diameter of the canal is not filled, permitting fluid to pass between the filling and the wall of the canal by capillary attraction. This is not due to the shrinkage of the gutta-percha in the majority of cases, but to the manner in which it is inserted.

The changes that take place after a tooth is treated are, first, the removal or resorption of necrotic and damaged tissues, and, secondly,

the formation of new tissue, the dentin and cementum being covered by new layers of dense and solid osteoid cementum. Atrophy of the connective tissues in the apical region frequently occurs, due to the obliteration of the blood and nerve supply of the pulp.—*The Dental Cosmos,* March, 1928.

PRECANCEROUS LESIONS OF THE ORAL CAVITY

By Charles M. Proctor, D.M.D.

The dentist is responsible for the oral health of the community and consequently the early recognition of cancer of the mouth is his duty. Therefore he should have a thorough knowledge of those lesions which are liable to lead to that disease.

The etiology of cancer is unknown, but there are certain recognized facts concerning it. It is a disease of civilization and is more frequently found in large cities than in rural communities. It is less prevalent among the poor than among the middle class and the well-to-do. It is neither infectious nor communicable, and people in good health are as susceptible as anyone else. Heredity as a factor has not been definitely established.

One thing we do know is that it frequently follows a constant or continued irritation of any sort. Consequently oral cancer may be due to (1) broken-down teeth and roots of teeth, (2) gingival cavities with overlapping mucous membrane, (3) periodontoclasia, (4) traumatic occlusion that causes tissue injury, (5) tobacco (especially with pipe-smokers), (6) leukoplakia, (7) epulis, (8) sepsis, (9) papilloma of the tongue or cheek, (10) fissure of the tongue or lip. Also there may be mentioned inflammatory hyperplasia due to dentures, crowns or bridges.

Malignancy in the mouth develops very rapidly, and generally in two or three months after recognition the case is hopeless. Pain is usually absent at the start, and when this is the first symptom noted, then the disease has proceeded too far for a favorable prognosis.

Every dentist must feel the responsibility of his position, since a radical operation must be performed before the lymphatics are involved, if there is to be any hope for success.—*Dental Items of Interest,* March, 1928.

PRACTICAL HINTS

This Department is now being conducted from the office of The Dental Digest. To avoid unnecessary delay, Hints, Questions and Answers should be addressed to Editor Practical Hints, The Dental Digest, 220 West 42d Street, New York, N. Y.

NOTE—Mention of proprietary articles by name in the text pages of THE DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule.

Editor, Practical Hints:

About six months ago I placed an orthodontic appliance on the upper teeth of a girl 14 years of age. The teeth were moved back a considerable distance. The gingival gum tissue on the labial has swollen and started growing over the bands which are on the front teeth. I intend to take the appliance off in a week or so. Would it be advisable to cut away this excess tissue? I don't believe the bands were impinging on the tissue at first.

Is this condition my fault, or does this happen when using appliances?

C. H. B.

ANSWER.—In the majority of cases such as you describe the trouble is directly due to improperly fitting bands or to the failure to keep the teeth clean. A great many orthodontists remove all bands at certain intervals, generally every few months, and give a thorough prophylaxis. The teeth may then be examined for incipient cavities. It would be a good plan if you did the same thing.

Editor, Practical Hints:

I should like your opinion on this case. The patient presented with the lower left eight partially erupted and very much inflamed. I advised him to use hot poultices. The following day he came back and said that the pain had centered on the lower six on the same side. This tooth had a small amalgam filling, which was well inserted and not encroaching on the pulp. Pain became more pronounced, so I extracted

the tooth. I then drilled out the amalgam filling and kept on until I reached the pulp chamber. Much to my surprise, I found that the pulp had died. What do you suppose was the cause?

R. G. B.

ANSWER.—Sometimes it is very hard to say why a pulp dies in an apparently sound tooth. Sometimes a blow received in the past and wholly forgotten is the cause. Sometimes the pulp dies from the extension of a pyorrhea pocket. In the case you mention there might have been some caries left under the filling or, even though the filling was small, there might have been thermal conductivity.

The next time I think I would advise opening into the pulp chamber and trying to save the tooth before extracting it.

Editor, Practical Hints:

I have some patients on whose teeth a black stain forms quite rapidly. I find that in these particular cases there is very little or no tartar. Will you please tell me the cause of this formation, and if there is any means of preventing it? In some of these cases there are very few fillings of any kind, and no gold nor amalgam in the same mouth from which there would be an electrolytic action.

J. M., B.

ANSWER.—The black stain is probably a sign of disturbed metabolism and in many cases its formation has been stopped by a change of diet.

Reduce materially the total amount of food taken and increase the proportions of roughage, such as lettuce, fruits, vegetables. Substitute whole wheat for white flour and reduce to a minimum the heavy carbohydrate and proteid foods, such as meats, breads, cakes, etc.

It may take some little time to get results and in the meantime the stain should be removed regularly by polishing.

Editor, Practical Hints:

Three members of one family grind their teeth while sleeping. The lower anterior teeth of one of these are broken and chipped as a result of it.

What do you advise as a cure, if there is one?

N. C.

ANSWER.—Grinding the teeth at night is generally considered a symptom of some nervous disorder. Anything which will build up the general health is beneficial and a physician should be consulted.

Editor, Practical Hints:

One of my patients, aged 48, has a perfect set of teeth and has been complaining for the last four months of an excessive flow of sweetish, metallic-tasting saliva which flows at intervals from the parotid glands on both sides. The patient is rather nervous on that account and really I do not know whether it belongs to a dentist to treat or whether I should prescribe a special diet, as he has nervous indigestion once in a while with feeling of stomach full of gases.

W. J. D.

ANSWER.—When you say that your patient has perfect teeth, I presume that you mean that there are no fillings. This would rule out the theory, advocated by some, that amalgam fillings may cause salivation.

Personally I believe that the symptoms are due to some systemic disturbance, and that the thing for him to do is to consult a good physician and have a thorough examination. His nervous indigestion is probably only another symptom of the same trouble.

Editor, Practical Hints:

I live in a town of 2,500 people, with several physicians—seven, in fact—and four dentists. The physicians do not get along any too well, and one has an x-ray machine and does very good work. Another, who has quite a large practice, does not have an x-ray. However, at the outset he owned half interest in the x-ray outfit now owned by the other man, and when he had an interest, he was very enthusiastic about x-rays. In fact, he is a crank on teeth and orders teeth out on general principles, but since selling out he bought one of those diagnostic lights, one of which I also have in my office, and every tooth that shows a cloudy area he orders out. I have obtained x-rays of some he ordered out and did not find any trouble, but he insists that the diagnostic light is conclusive proof if the dark area is there. It makes it hard for me, because he really is a good physician. Therefore I am asking you if you consider the diagnostic dental light sufficient proof to extract promiscuously and wreck many mouths, or should I continue to stand on my ground and demand x-ray pictures before removal?

J. K. D.

ANSWER.—You are in a hard position, and it is too bad that physicians—some of them, at least—refuse to cooperate with the dentist and insist on playing havoc with their patients' mouths. The more progressive physicians are only too glad to consult with the dentist.

The diagnostic lamp has been discredited by a number of leading men, and while in some cases it may be an aid to diagnosis, I would not

for a minute think of extracting a tooth on its evidence alone. If I were you, I would insist on an x-ray, and if the x-ray finding was different from that of the lamp, I would explain the matter very carefully to the patient. I do not see why patients should suffer for the petty jealousies between the physicians, and I would advise you not to take part in it. You should do what you feel to be right and then your conscience will be clear.

Editor, Practical Hints:

I should appreciate very much your help and advice on the following case.

A girl, 8½ years old, has both six-year molars and the four incisors in the lower jaw erupted and in place, and both six-year molars and two centrals erupted in the upper. All the teeth seem to be in place and in line, except the upper left central, which is inclined to the lingual and bites inside the lower central. This bite has somewhat loosened the lower central and pushed it out slightly.

What would you suggest as to the best method and appliance to bring the upper central out over the lower so as to give it the correct bite?

F. C. F.

ANSWER.—The best method to bring this central into place is to place a lingual arch banding the second temporary molars and the first permanent molars. This arch should have no spring and serves only as an anchorage. A finger spring is soldered to the arch so that it presses against the central in question. A great deal of force is not necessary, and you will find that in a very short time the malocclusion will be corrected.

Editor, Practical Hints:

I am enclosing a set of x-rays of the teeth of a physician, 32 years of age, who has been suffering with an iritis that has been recurring every four or five months.

When I first saw the case, the left eye was badly inflamed and painful. I removed the lower left first bicuspid, which showed an abscess, and which was a devitalized tooth. The eye infection flared up for 24 hours, afterward subsiding entirely. This was about four months ago.

Within the last month there has been a recurrence, this time very severe in the right eye. My suspicion naturally was directed to the remaining devitalized teeth. Can you detect any areas at the apices of those teeth, and has your experience shown that enough pathology could exist in the filled canals to cause such an infection?

The patient and I have consulted with different specialists, but are unable to get a definite diagnosis. I hate to make a needless sacrifice of teeth, but that seems to be the only course left.

The patient is healthy, Wasserman is negative, and there is no history of sinus trouble. The root-canal fillings have been in place about six years. There was no iritis before this time, the infection getting gradually more severe each year. Two years ago the patient was treated for a Vincent's angina around the first and second molars (upper left), which apparently has cleared up.

F. R. G.

ANSWER.—There is a lower bicuspid and an upper molar which show apical involvement. Several other roots are incompletely filled.

When such good results were secured from the previous extractions, it would almost seem advisable to remove all doubtful teeth. This may seem rather drastic, and I think that it is a course of action which should receive careful consideration. The patient himself should be in a position to help in the decision.

It is easy to say that certain apical tissues are not normal, but it is almost impossible to tell whether or not they are the seat of an active infection.

Editor, Practical Hints:

I should appreciate it if you will advise me on handling patients with pellagra. My experience has been that with this type of patient every time a tooth is extracted they die in from about five weeks to three months. I have asked the physicians of the county in regard to this and they treat it lightly. I have asked the members of my own profession and they treat it the same way.

But I can name six patients who have been in my office in the year 1927 who have come to this same end. Of course they are usually in a low state of health when the physician can get them to see a dentist, but why do they die so quickly afterward? I am now refusing to pull teeth with patients suffering from this disease.

Please convey to me any information you can on this subject, because it worries me and I cannot figure it out.

C. L. G.

ANSWER.—I regret to say that I cannot advise you in regard to patients suffering from pellagra. I would follow the advice of physicians who have had experience in handling these cases.

There is always an element of danger in extracting teeth when the patient is suffering from a systemic disease and the resistance is con-

siderably lowered. The operation sets free pathogenic organisms in the blood stream, and not a few fatalities have been reported. The usual procedure is serial extractions, whereby one tooth is removed and the reaction of the patient is noted. Then another is extracted until all that are necessary have been removed.

Of course, there are some physicians who attach little importance to any dental operation, while others carry it to extremes. It is sometimes hard to know exactly what to do, but I should think that by going slowly you might continue the extractions in this type of case.

Editor, Practical Hints:

Can you give me the diagnosis, possible etiology and treatment of a condition which appears to be a pair of seed warts occurring on the end, partially under the nail, of the second finger, right hand of a dental operator? The lesion or condition seems to be growing slowly.

Very indistinctly I recall a similar condition being discussed in a dental magazine.

P. D. L.

ANSWER.—I regret to say that I can find no reference to the condition you describe, nor do I quite see how it could be connected specifically with dental operating.

I would advise you to consult a physician and follow his advice.

Editor, Practical Hints:

Can you tell me what to do for ropy saliva?

F. D. L.

ANSWER.—Ropy saliva may be taken as a sign of unbalanced metabolism. I should advise you to have the patient cut down on the total amount of food eaten and increase the proportion of roughage. Eat plenty of raw, fresh vegetables such as lettuce, celery and tomatoes. Substitute whole wheat for white flour and reduce to a minimum the amount of heavy carbohydrate and proteid foods such as meats, breads, cakes, etc.

I feel sure that in time this will correct the condition.

CORRESPONDENCE

Hot Springs, Ark.

Editor, DENTAL DIGEST:

Enclosed is a photograph, showing a country boy and the result of a poultice.

A six-year molar was extracted and the case was lanced. According to the last report, the patient was all right.

O. W. HUFF.

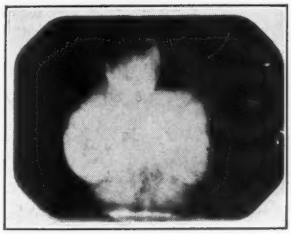
Choteau, Montana.

Editor, DENTAL DIGEST:

Thinking that it may be of interest to some readers of THE DENTAL DIGEST, I enclose herewith a radiogram of a growth into which is embedded the roots of a lower left second premolar of a girl eight years old.

Six months before its removal the tooth was so loose that the child

tried to remove it with the fingers, after which the tooth tightened and the growth seemingly commenced to form and grew to one inch in diameter both ways in that time.



The rapidity of its growth and size are worthy of note. The radiogram was secured after the removal.

C. J. B. Stephens.

Brooklyn, N. Y.

Editor, Dental Digest:

In the July, 1927, issue of The Digest you printed an x-ray showing two wisdom teeth in a row and labeled it a somewhat rare case.

I am enclosing herewith another rare case, an x-ray of a case in my practice showing two upper wisdom teeth, one above the other, and both impacted.

The patient complains of no pain nor discomfort.

Jay Rosten.

Medford, Oregon.

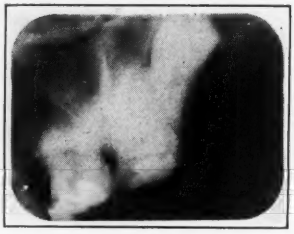
Editor, Dental Digest:

A patient was referred to me by her physician with the request that I find out what was the trouble with her. Two dentists and one rhinologist had given an O. K. Married woman about thirty years old,

apparently in the best of health, fine-looking teeth and gums, very well kept.

Symptoms: Intermittent pain at base of skull, neuralgic pains about the jaws and head, tendency to pressure over canine fossa on left side, simulating antral involvement, but antrum negative to trans-illumination and x-ray.

X-ray examination of teeth and jaws revealed right upper third molar unerupted and slightly impacted; left upper third molar, as in film, completely inverted.



Operation at hospital, gas-ether anesthesia, removed buccal plate via mallet and chisel, and turned out tooth with an elevator. Tooth removed intact with cyst membrane "granuloma" attached. This membrane was about as large as the crown of the tooth. Irrigated with normal saline and packed twenty-four hours with 5% iodoform gauze. Removed right upper third with elevator.

Patient made an uneventful recovery and is now free of all her disagreeable symptoms.

R. R. Johnson.

By a strange coincidence the accompanying x-ray was submitted by Dr. Lyman H. Wilson of New York. It shows the third molar in almost

the same position as in Dr. Johnson's case, but in this case the patient was showing no symptoms and the tooth was not removed.—*Editors.*

DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All questions and communications should be addressed to Elsie Pierce, care of The Dental Digest, 220 West 42nd Street, New York City.

NOTE—Have you a better way? Have you a time-saving short cut? Do you know a "stunt" that lightens the work or makes for efficiency in the office? If so, write to Elsie Pierce, care The Dental Digest, 220 West 42nd St., New York. You may help a number of girls who are just beginners—and you know how you needed help during your first few months in a dental office. Or if YOU need help now write to Elsie Pierce—she'll help you.

Dear Miss Pierce:

I have been working in a dental office for a year now and should like to go farther in the work, so I am asking for your help. I should like to know how long, and approximately how much it would cost, to take a dental hygiene course. Also, I should like to know the names of some of the schools in which I could get this course in the Middle West.

N. E. D., Ind.

Answer—If you will consult the September, 1927, issue of The Dental Digest, you will find in the Questionnaire for that month a list of the schools giving training in dental hygiene. A letter to the Dean's office will give you all the information you desire. I may state that you must have a high-school certificate or its equivalent for matriculation at any of the schools. I mention this requirement so that you may be prepared. Northwestern University Dental School, at Chicago, is the one nearest to you.

Dear Miss Pierce:

Herewith find suggestion for the use of hemostatic forceps.

Small-sized hemostatic forceps can be applied to many advantages

in a dental office, such as introducing a sprue wire into an inlay pattern, direct or indirect, and also for withdrawing it. These forceps hold the sprue securely and keep the fingers from getting burned. When assisting the doctor in root therapy, place hemostatic forceps on the tray, for he will find them a great help in holding the diagnostic wires in place. In fact, he will come to rely upon the assistant's including these forceps among the instruments to be used in any of the following operations:

For twisting ligature wires in setting a fracture of the jaw.

For posts for pivot teeth and fine wire in making pinledges.

When using articulating paper in taking a bite.

For removing matrix band from around a filling or inlay pattern.

When introducing X-ray film into a patient's mouth, especially in third molar regions, if the patient gags easily.

For examination of X-ray film just developed and not dry.

The hemostatic forceps holds everything securely and far surpass the ordinary pliers for many uses.

M. E. Q., Brooklyn.

We desire to thank M. E. Q. for these valuable suggestions. It is always gratifying to hear from our readers in this helpful way.

Dear Miss Pierce:

I read your department every month and enjoy it very much, but as dental assisting is entirely new work for me, I am considering taking a correspondence course for dental assistants. I should like your advice on this matter. Please tell me which would be the best course to take.

E. M. G., Plattsburg, N. Y.

Answer—I am not an advocate of correspondence courses for dental assistants. To become familiar with the many details of the service required in a dental practice, one must have direct contact with the daily experiences and necessities that accrue thereto. Assisting the dentist and his patients is not a mechanical or routine procedure. Each case requires individual care and attention; no two patients can be treated alike. There may be a great similarity in cases, but there is always sufficient variation to make each one individual. If you will pay strict attention to the patients, and to whatever instructions the dentist gives you, and also read all that you can find of value in the dental magazines that come to your office and in the books on certain subjects that are in the doctor's library, such as sterilization, hygiene, anatomy, office procedure, etc., I am sure you will profit as much as you possibly could by a correspondence course. As far as

recommending any such course, I could not tell you which might be better or best.

If you are really interested in your work and enjoy it and give to it the best that is in you, you will succeed. Good judgment, tact and earnestness will accomplish much, and these are not learned by correspondence. The will to do, plus a cheerful disposition, goes a long way on the road marked *Service*.

Dear Miss Pierce:

You have helped me so much in your department since I have become a dental assistant that I am going to ask you to help me about the following:

The seats and the backs of the dental chairs in the office are of dark tan leather, also the head rests, and in the reception room we have leather-covered furniture in a brownish shade. Please tell me what to do to clean them of soil and spots which spoil their appearance. Perhaps your suggestion may help some other dental assistants who are proud of the appearance of the office furniture, as well as myself.

C. B. A., Michigan.

ANSWER—First, may I caution you to be sure that the upholstery you speak of is genuine leather, as the method for cleaning that I am going to suggest might spoil imitations.

With a soft flannel cloth or similar fabric, warm water (not hot) and Ivory soap, carefully clean the leather, being sure to wring out all excess water from the cloth so as to avoid slopping. Then apply a reliable saddle dressing, according to directions on the container. This can be purchased at any leather-goods store and in some department stores. There are also on the market leather soaps, if you prefer using them instead of the one suggested.

Educational and Efficiency Society for Dental Assistants, First District, New York, Inc.

A regular meeting of the Educational and Efficiency Society for Dental Assistants, New York, was held on March 13, 1928.

Dr. Anna Ingerman, a prominent physician, spoke on *Ductless Glands as a Key to Health,* illustrated with lantern slides. Laura Maxham, a member of the Society, gave an excellent paper on *Rubber, Its Manufacture and Uses.*

On Thursday evening, March 15, a class on the care of dental equipment was given. The instructor stressed the importance of keep-

ing the various parts of the equipment in good order by proper oiling and gave a demonstration on dental chairs, units, lathes, compressed air motors, etc. On March 22, Dr. B. F. Gilmore, anesthetist in the Dental Department of the Samaritan Hospital, gave a lecture on the administration of nitrous oxid gas. An explanation of the technical part of the administration of nitrous oxid was made and an actual demonstration on two members of the class was given. The taking of blood pressure also proved of much interest to the class. A class in public speaking and parliamentary procedure is being organized and will begin its sessions shortly. The classes of the Society are held for its members on each Thursday evening and are under the direction of competent members of the dental profession. Further information may be had from the Chairman of Classes, Agnes F. MacNeil, 113 South Elliot Place, Brooklyn.

At the April 16th meeting of the Clinic Club in the office of Dr. S. R. Eolis, Times Building, New York, a very instructive lecture on the proper method of sharpening all kinds of instruments was given. Plans were made for the clinics to be presented before the Sixtieth Annual Meeting of the Dental Society of the State of New York at Syracuse, May 17-18. The Clinic Club meets regularly on the third Monday evening of each month, September to May, inclusive, when the various phases of dental assisting are analyzed and discussed. All members of the Educational and Efficiency Society for Dental Assistants, New York, are eligible for membership and are urged to lend their cooperation.

Several valuable books and many new articles of interest to the dental assistant in her work have been added to the Library. The Book of Helpful Hints also has been enlarged and contains much useful information in regard to efficient methods of procedure in the daily routine. Many interesting facts concerning the history of dentistry, dental instruments and dental equipment are contained in the Scrapbook. The contents of the Library are available to all members of the Society and may be obtained from the librarian, Anna Neulinger, at any regular meeting or by addressing her at 535 West 110th Street, New York.

The regular meetings of the Society are held on the second Tuesday evening of each month, October to May, inclusive. Dental assistants are invited to join and aid the Society to carry on its work of raising the standard of education for dental assistants in order that they may more efficiently serve the dentist and his patients. Members of the dental profession are cordially welcome at the meetings.

The annual meeting of the Educational and Efficiency Society for

Dental Assistants, First District, New York, will take place at the Academy of Medicine, 2 East 103rd Street, New York, on Tuesday, May 8, 1928, at 7:30 P.M. Election of officers will be in order, and the meeting is open to members only.

Montreal Dental Assistants Association

The monthly meeting and clinic of the Montreal Dental Assistants Association was held in the Dental Department of McGill University on March 19, 1928. Miss R. Firth presided. The guest-speaker for the evening was Mr. Russell A. Copeman, President, Montreal Study Club of Dental Technicians, on the subject of *Construction of a Porcelain Jacket Crown.* Mr. Copeman introduced his subject by giving a brief talk on the use and advantages of the porcelain jacket crown over the gold crown. He drew a series of diagrams of the construction and followed with the practical demonstration of the various steps involved in its making. He pointed out that the dental assistant would benefit a great deal by learning this work, thereby both bettering herself materially and proving a greater asset to the dentist.

Legislation—Its Advantages to the Dental Assistant*

By Mabel Porterfield, Atlanta, Georgia

The definition of the term *law* as given by Blackstone is that law is a science which employs in its theories the noblest faculties of the soul and exerts in its practice the cardinal virtues of the heart; a science which is universal in its use and extent, accommodated to each individual, yet comprehending the whole community.

Laws are not invented, but grow out of circumstances. No people are better than their laws; many are worse.

When we look over the history of the medical and dental professions and note the remarkable progress of both, we are forced to recognize that proper legislation has been one of the most potent factors in their development. As an illustration, it is in the memory of dental practitioners yet in active practice that young men were apprenticed to dentists and simply learned the so-called *trade,* but with the development legislation was enacted and gradually changed until we see the dental profession as it stands today. When the apprentice

* Read at the Third Annual Meeting of the American Dental Assistants' Association, Detroit, Michigan, October 25, 1927.

was learning his trade, there were no laws governing practice. Now it is essential that preliminary work be required equivalent to at least one year of college or university work with a four-year dental college course successfully pursued and the passing of an examination before a board of examiners in each state in which the dentist desires to practice.

Most legislation is supposed to be for the protection of the public, and you will already recognize the protection which the dental laws are to the public today. Were it not for this legislation, each and every community would probably be filled with dental quacks with a more or less limited knowledge, and the health of the public would be in jeopardy at all times.

The dental assistants are today in practically the same position as was dentistry in 1839, when the first dental college was established with legislation more or less limited. You ask, what is the present status of legislation governing dental assistants? I know of no legislation directed to our particular profession, and since it has grown to such an extent that we have local, state and national organizations, certainly proper legislation should be properly enacted. The purpose of this legislation must be two-fold, in that the public must be protected from the untrained and incompetent assistant and the properly trained assistant should be protected from competition with the ignorant and untrained assistant. We certainly cannot maintain a satisfactory standard so long as we have competition of the nature previously mentioned.

Legislation should be enacted requiring a preliminary education equivalent to graduation from an accredited high school or a commercial high school of equal rating, the commercial high school being preferable, due to some of the courses given in such schools. An applicant should necessarily be of good moral character and should be able to pass a physical examination showing no form of contagious disease. She should be a graduate of a department of a recognized dental college or university which is recognized by the Dental Educational Council of America.

A standard course should be outlined in these schools covering, among other subjects, bacteriology, which would of course include technic for sterilization. This is most important because of the liability of the assistant's delivering to the dentist instruments which are not sterile, and which might possibly carry infection from one mouth to another. Also, the handling of infected instruments is of course a menace to the health of both the assistant and the dentist unless a knowledge of this subject is possessed by both.

A course in materia medica should be given in order that the drugs may be handled intelligently, it of course being understood that the

application of drugs to the patients should be administered by the dentist only.

Dental anatomy should be included, so that the assistant could help the dentist in the laboratory in inlay work, etc.

An assistant should be thoroughly trained in instrument nomenclature and with the use and abuse of such instruments. She should be thoroughly taught the properties and manipulations of the various materials used in the office, because the success of much of the dentist's work depends on the proper manipulation by the assistant.

Bookkeeping and stenographic work should be included in the high school course preliminary to entering college.

Law is never wise except when merciful. However, mercy has its conditions, and what is merciful to myriads may seem hard to one person. Yet we must be governed by the greatest good that may be accomplished by the enactment of legislation governing our organization.

If we can enact laws which will develop the standard of requirement mentioned before, our organization will soon become one thoroughly recognized and appreciated. Unless they are enacted, we shall necessarily drift along with the current.

910 Medical Arts Building.

DIETETICS and HEALTH

What Proper Nutrition Did For One Family*

On opposite sides on a street in Minneapolis there lived, a few years ago, two families who were much alike in the following particulars:

There were four in each family, the parents and two children of about four and a half years and nine years. They were of good heredity, of more than average intelligence, lived clean lives, and were probably in about the same financial circumstances.

There was one great difference between the families. In one the children were so healthy that the average expenditures for medical service were about $2.50 annually. In the other family the children were so frequently ill that the average expenditures for medical service were about $780.00 per year.

One day one of the mothers visited the Dental Department of the University of Minnesota and said to Dr. Owre: "Our children are nearly always ailing and it seems to me that their teeth decay constantly. We spend $780.00 per year for medical service, which is a serious drain upon our income, and we do not get the desired result. Can you suggest any one thing we can do which is likely to improve the condition?"

She was told that it might be worth her while to check over the food intake of the children and see whether it was what it should be. She gladly consented. It was found to contain an excess quantity of cooked fruits, refined bread and cereals and a deficiency of uncooked fruits and vegetables and milk. A great change was made. Refined sugar in all forms was practically eliminated, the quantity of bread and cereals was greatly reduced, the proportion of uncooked fruits and vegetables was increased, and the children were given all the milk they wanted to drink. Soon an improvement in their condition was apparent. Shortly thereafter all the pills and powders, tonics, cough remedies and laxatives were thrown in the ash barrel, never to return. The expenditures for medical service nearly disappeared and the children continued to gain in vigor and health.

* This is one of several interesting stories related to the Preventive Dentistry Section, First District Dental Society, New York, by Dr. Alfred Owre on the evening of March 14, 1928.

Diet and Pyorrhea

By J. Menzies Campbell, L.D.S., D.D.S., F.R.S.Ed., Glasgow, Scotland

For the past few years I have been firmly convinced that diet is a most important factor in the causation of both dental caries and pyorrhea and have advised my patients accordingly, with varying results, depending on which the patients considered of greater value, "the pleasures of the table" or their teeth.

On January 20, 1927, Mr. X was referred to me by his medical adviser, with the object of having several of his teeth extracted on account of pyorrhea. He suffered from the typical so-called pyorrhea, with marked gingivitis and pus exuding, on pressure, from several points; salivary calculus was present in abundance on the lingual surfaces of the lower incisors and on the buccal surfaces of the upper molar teeth, and halitosis was very marked. In the upper jaw were three teeth with ill-fitting gold crowns. X-ray examination revealed general absorption of the alveolar margins, but no apical infection. I removed the gold crowns, reamed the pulp chambers, inserted creosote dressings and sealed with temporary cement, being unwilling to proceed with the recrowning until I felt assured that the condition was responding satisfactorily to treatment. At the same time I performed thorough prophylaxis and instructed the patient in the proper care and hygiene of the mouth, including the use of a mouth-wash composed of lemon juice and water.

I reported the results of my examination to his doctor, at the same time telling him that I thought it would be possible to save all the teeth if the patient could be persuaded to adopt a diet I should schedule for him. The doctor readily agreed to this and gave me whole-hearted support, which was of great assistance in tiding the patient over the difficult period that must elapse before any result could be seen or felt. The patient rather grudgingly agreed to give the treatment a trial for six months.

I prescribed a diet which contained a large proportion of fresh raw fruit and vegetables, and of which the salient features were three meals daily—one fresh fruit, one carbohydrate, and one protein. The fresh fruit was eaten, absolutely alone, for breakfast; the carbohydrate meal consisted of any kind of coarse-grained bread with plenty of butter, followed by a large raw vegetable salad, and the protein meal consisted of a small portion of meat (to be taken not oftener than twice a week), or eggs or fish or cheese or fowl, etc., always accompanied by two of the less starchy vegetables, properly (that is, conservatively) cooked, and followed, as in the carbohydrate meal, by a large raw vegetable salad. I also allowed him when he so desired to partake of a purely vegetable soup (neither bones nor meat of any kind to be used in its preparation),

or stewed dried fruit. The carbohydrate and protein meals were to be taken, one at midday and the other in the evening, in whichever order the patient preferred. No condiments of any description were to be consumed.

The patient has reported at intervals since his first visit, and an improvement has always been manifest. On November 14, 1927, examination of his mouth revealed teeth firmly implanted in sockets, absence of pus sockets, no halitosis, no salivary calculus, and only the slightest trace of gingivitis, which, I am confident, will disappear after a further period of treatment. The patient himself said that the rheumatism, from which he had long suffered, was quite gone, and that constipation was much less marked. In appearance he looks much more virile, his skin is clean and healthy, and he declared, voluntarily, that his diet suited him admirably, and that he would not think of returning to the old regime.

This result confirms what Howe, McCollum, Simmonds, and others have been teaching—namely, that pyorrhea is merely a symptom of a general poisoning of the body brought about by a wrong diet.—*British Medical Journal,* Dec. 24, 1927.

[PROPER DIET]

We are compelled to define a perfect meal as one which supplies a sufficiency of food for its portion of the daily ration, which is properly balanced as to its food principles, which is easily digested and assimilated and which is palatable. Within the range of this definition an infinitude of perfect meals can be found.

—CORNWALL.

Books Received

A BOOK MAY BE AS GREAT A THING AS A BATTLE—DISRAELI

Partial Denture Construction—A Text Book Describing the Technics of Impression Taking and the Construction of that Type of Removable Partial Dentures which are Supported and Retained by External Attachments, by Edward Kennedy, D.D.S., Consulting Dental Surgeon, with Special Reference to Postoperative Dental Prosthesis, Skin and Cancer Hospital, New York, N. Y.; Former Demonstrator of Prosthetic Technics, Crown and Bridgework, Dental School of University of Pennsylvania.

A great many dentists claim that a partial denture which will be serviceable and do the least amount of damage to the surrounding tissues is more difficult to construct than a full denture. Yet comparatively little has been written on this subject. In fact, so little advance has been made and the measure of success is so small that many practitioners prefer to let their patients remain in a crippled condition until the time comes when all the teeth may be removed.

We believe that this is the first book devoted entirely to partial dentures, and it will supply a distinct need. The success of Dr. Kennedy in this line of work is well known and needs no elaboration here. Suffice it to say that he presents clearly the technic that he uses in his office, and while the personal equation, such as judgment and mechanical skill, is an important factor, a careful reading of this book cannot fail to produce better results for the painstaking dentist.

According to the author, the two most important steps are the taking of the impression and the design of the saddle. For the former he prefers the sectional modeling compound technic and does not believe in the closed-mouth method. The various kinds of clasps are gone into in detail, and their advantages and contra-indications are clearly pointed out.

Other details and steps in partial denture work are explained with the same care and thoroughness, and we can recommend this book to any one who wishes to improve his work in this difficult part of dentistry and to safeguard the best interests of his patients. The presswork and illustrations leave nothing to be desired.

464 pp., with 401 illustrations and index. Brooklyn, N. Y.: Dental Items of Interest Publishing Co., 1928.—A. M. J.

Iconographia Odontologica, by Curt Proskauer.

This volume is a collection of pictures compiled by Curt Proskauer and deals with dentistry from early times. It is a graphic portrayal of the beginnings of the profession and clearly shows the handicaps that have been overcome in arriving at our present standard.

The majority of illustrations merely show the extraction of teeth, since this was for a long time the commonest operation. The tooth-puller generally was itinerant and surrounded himself with quackery and charlatanism. Under the date of 1781 there is a picture of a dentist scaling a lady's teeth, and at about the same period is shown the operation of transplanting teeth. Both of these are by British artists.

The number of countries drawn on as a source makes the book of great interest, and while the supply of illustrations has by no means been exhausted, yet, as the author states in his preface, a limit had to be placed somewhere and only those were included that seemed to have special interest.

From the crude methods used in removing teeth and, at times, part of the adjoining tissues it is easy to understand why the fear of the dentist has secured such a deep hold on the general public. This feeling has been only partially overcome and is one of the chief obstacles with which the dentist has to contend.

The preface and bibliography are written in German, but this in no way detracts from the value and interest that the book holds for dentists in this country. The publisher is to be congratulated on the mechanical perfection of the work.

231 pp., with bibliography and index. Berlin: Hermann Meusser, 1927.—A. M. J.

The Practice of Periodontia, by Sydney Sorrin, D.D.S., Chief of Periodontia Clinic, New York University College of Dentistry, and Samuel Charles Miller, D.D.S., Instructor, Periodontia Clinic, New York University College of Dentistry; formerly Instructor of Physiology and Histology, New York University College of Dentistry.

This book is a practical text on the method of treatment that is being used successfully at the New York University College of Dentistry. It is most optimistic in regard to the prognosis of a disease that is considered incurable by many practitioners.

Going on the correct assumption that, in order to know what is wrong, it is necessary to know first what is right, the authors devote

the opening chapters to the micro-anatomy and the physiology of the parts involved.

The etiology is based on the classification of Box and McCall, and the necessity of a complete x-ray examination is stressed. Of the great number of cases treated at the Periodontia Clinic at New York University, the authors claim that 85% were due chiefly to traumatic occlusion. The correction of this condition is gone into in great detail.

Instrumentation and the use of the toothbrush are next taken up and clearly shown by illustrations, and the book is concluded with short chapters on Vincent's infection, splints, instruction to patients, and diet.

This is a concise, clear and well-written treatise on the subject of periodontia and can be recommended to both student and practitioner. Theorizing is conspicuous by its absence, and only methods that have proved their value are advocated.

160 pp., with 122 illustrations and index. New York, N. Y.: The MacMillan Company, 1928.—A. M. J.

Two In One—Convention and Vacation

The ideal time of the year in Minnesota has been selected for the Seventieth Annual Session of the American Dental Association. Untold opportunities are presented for the finest vacation trip imaginable. Minneapolis itself, fittingly described as the *City of Lakes,* will afford the visitor the six large bodies of water within the limits of the city, with shore lines of from two to five miles in length. A beautiful tree-bordered system of boulevards encircles the city and links these lakes with other beauty spots. Parks and playgrounds, residential areas, the wooded gorge of the Mississippi—the Father of Waters—Minnehaha and Victory Memorial Drive, with 568 elms dedicated to the soldier

dead of Hennepin County, are all included in one of the finest park systems in this country.

Haven't you often had it in mind that sometime you would like to spend a vacation on one of the Ten Thousand Lakes in the north woods of Minnesota? Minneapolis is located in the heart of the Ten Thousand Lakes region, and you could easily establish your vacation headquarters anywhere from ten to two hundred miles from the Convention City, in a spot that will give you everything desirable in the way of recreation. Wide, smooth highways spread in a network all over the entire State—Minnesota's vacation land.

It is impossible to describe adequately the attractiveness and comfort

of the New Municipal Auditorium of Minneapolis, where the Seventieth Annual Session of the American Dental Association will be held. It is large enough to be ample for every need of the American Dental Association Convention and yet it has sufficient warmth and color to make you feel that you are close together, even though you are one in a crowd which fills it to capacity. "What a large, yet cozy place!" said Dr. Roscoe H. Volland, President of the American Dental Association, when he first saw it. You'll like it, too!

The Convention program will be the most elaborate ever carried out in the history of the American Dental Association. The scientific sections and the general clinics will be grouped into the most ideal arrangement of any meeting heretofore, affording the visitors the best possible means of deriving the greatest amount of good out of the meeting. This will truly be the De Luxe Meeting of the American Dental Association.

COME AND BE CONVINCED!

PUBLICITY COMMITTEE.

One Hundred Years Ago

(Communication to the *Baltimore Chronicle* of December 27, 1827.)

(EDITOR'S NOTE.—This communication appeared recently in a Philadelphia paper. The name was not sent to us and consequently we regret that we cannot give proper credit.)

I had been suffering for a long time with that cruel complaint which in Shakespeare's opinion is too much for the most stoical patience. My mouth should long since have parted with the two disagreeable guests which had tormented me with such unrelenting pertinacity, but I equally dreaded the horrible crunch which accompanies the extraction with the pullikins, and the agony inflicted by the twisting of the forceps. A few days ago, as I was thinking on this subject, I happened to meet with an extract from the last number of the London Transactions of the Society of Arts on the removal of disordered teeth by cutting them off. The operation was invented by Dr. Fay, an American dentist of considerable ability, lately established in London. Whilst poring over these remarks I received a visit from a medical friend who, on learning of the painful subject on which I was meditating, informed me that he had lately received from London a set of Fay's instruments with which he had been successful in several cases. I required very little persuasion to accompany him to his office and to submit to the operation, which was performed with astonishing celerity and scarcely any pain by snapping the teeth off at their necks.

Lieutenant Governor Cyr

Dr. Paul N. Cyr, one of the prominent dentists of Jeanerette, Louisiana, was elected Lieutenant Governor of Louisiana on April 17, 1928.

Dr. Cyr was the candidate of the Democratic party for that office, having been nominated by a large vote over several other candidates at the primary election held on January 20, 1928.

While in active practice the doctor has found the time to busy himself with the civic affairs of his parish and state. For six years he served his people as the President of the School Board of Iberia Parish and is still a member of that body. He was for twelve years a member of the Board of Dentistry of Louisiana. He was also President of the Louisiana State Dental Society for one year. He was graduated in 1900 from Atlanta Dental College.

The Lieutenant Governor is now forty-nine years of age and his friends confidently hope to see him occupy a still higher position in the service of the public.

A Novel Infirmary Procedure

The New York University College of Dentistry has instituted a new method for sterilizing instruments that is a great improvement over those methods in use in many dental infirmaries. Not only does it insure perfect sterilization, but it guards against contamination subsequent to this process.

The sterilizer is in reality a cabinet containing 300 separate compartments. The student first cleans his instruments and then turns them over to a nurse, who wraps them in a towel and places them in one of the compartments. They are subjected to superheated steam for approximately half an hour and are then delivered to the student still wrapped in the towel, which is not opened until it is necessary to use the instruments.

By the method in general use the instruments are boiled and then wiped with a towel that may be clean but that is by no means sterile, and they are also exposed to the air. In some dental schools there is practically no supervision over the sterilization of instruments and consequently the students are likely to become careless both as to the length of time that sterilization is continued and as to the precautions that are taken afterward.

The method now in use at the New York University College of Dentistry will make sterilization certain and is a step in advance in the conduct of an infirmary.

[KNOWLEDGE NECESSARY]

Not the possession of a certain university degree, but the extent of knowledge, will determine the extent of a man's usefulness and appreciation by his fellow men.

—THORNTON.

EXTRACTIONS

No Literature can have a long continuance if not diversified with humor—ADDISON

There's a vegetarian out in California who won't read anything by Lamb or Bacon.

(Mistress)—The master was very happy this morning, Jane. He started out for his office whistling.

(Maid)—Yes, mum, and it was my mistake. I made his porridge of bird-seed.

Rainbow Chasers

There are some men that seek for truth afar,
Beyond the borders of the last, dim star.
Yet truth gleams here within a blade of grass—
They catch a glimpse; and, searching still, they pass.

(Motorist)—I clearly had the right of way when this man ran into me, and yet you say I was to blame.

(Local Constable) — You certainly were.

(Motorist)—Why?

(Local Constable)—Because his brother is Mayor, his father is chief of police and I am engaged to his sister.

A Tragic Incident

Two faces were close together, the man's grim, tense; the other face was small and white, with two slender hands pressed tightly against it. It was those frail hands that riveted the man's horrified gaze.

"Heavens!" he said, still staring, and in his voice was hopeless, stark tragedy, for that other face was the face of his watch, and those little hands told him he had missed the last train home.

"Our hens," said Farmer Corntossel, "suddenly quit laying eggs. On investigation I found that some one had inadvertently dropped a book on birth control into the hencoop."

She Knew The Real Thing

(Husband)—I often wonder when I am in heaven how I shall get my coat on over my wings!

(Wifey)—Don't worry about that. Your difficulty will be getting on your trousers over your tail.

Try This One

A few weeks ago a man deposited $50 in a bank. Then he withdrew—

$20 leaving	$30
15 leaving	15
9 leaving	6
6 leaving	0
$50	$51

The English people are in trouble again in revising the Bible, which reminds us of a little story of a difficulty that had to be overcome in translating the Bible for the Eskimos. When it came to the miracle of the Lord changing water into wine, as there was no equivalent for wine in the Eskimo language, they had to use the words "whale blubber."

(Reporter—to Old Timer)—To what do you attribute your longevity?

(Old Timer)—Well, if you must know, it's because I never died.

He goes farthest who does not know where he is going.

Pleasant Dreams—Dingaling!

Just when you have bought the Standard Oil Company, the Pennsylvania Railroad, and won a million dollars in Wall Street, the darn alarm bell rings!

Well Meant, But—

Here lies the body of Mary Ann Proctor,
Who caught a cold and refused a doctor;
She could not stay, she had to go—
Praise God, from whom all blessings flow.

Well, Go To It

I like to write and do not care
That I have not the careless flair
Some writers have.
I like to write, but must admit
That I have not the sparkling wit
Some writers have.
I like to write, although I lack
That certain something—call it knack—
Some writers have.
In common, then, just this remains
In mine and other writers' brains:
I like to write.

FUTURE EVENTS

THE MASSACHUSETTS DENTAL SOCIETY will hold its sixty-fourth annual convention at the Hotel Statler, Boston, May 7-11, 1928. A large delegation of dentists from other states is expected and the total registration will be in the neighborhood of five thousand.

Monday will be given over to registration and business sessions. On Tuesday, the President, Richard H. Norton, will call the convention to order and deliver the annual address. At 11:00 A.M., Leroy M. S. Miner, Dean of Harvard University Dental School, will lecture on *A General Consideration of the Problem of Vincent's Infection.* In the afternoon there will be teaching clinics in operative dentistry, periodontia, and oral surgery.

Some of the prominent men who will lecture are:

Robert Box, Toronto, Ontario,
James Gregory O'Neill, Windsor, Ontario,
George H. Bigelow, Commissioner of Public Health of Massachusetts,
Theodore Blum, New York,
C. N. Johnson, Chicago,
Martin Dewey, New York.

The annual banquet and ball will be held on Thursday evening at the Hotel Statler, and on Friday afternoon there will be a golf tournament at the Commonwealth Country Club.

The entire program of the convention has been arranged with great care and thought to promote educational and scientific interests in dentistry. The subjects covered are of a most practical nature, dealing with every-day problems confronting the general practitioner and specialist alike.

THE BOARD OF DENTAL EXAMINERS OF CALIFORNIA will conduct an examination for a license to practise dentistry and a license to practise dental hygiene, in San Francisco, commencing May 12, 1928, at 8:00 A.M., at the Native Sons Hall.

An examination will be held in Los Angeles, commencing June 16, 1928, for a license to practise dentistry. This examination will be held at the University of Southern California at 9:00 A.M.

Complete credentials, together with the required fee of $25.00, must be in the hands of the Secretary at least twenty (20) days prior to the examination. Only cashiers' checks or money orders are accepted.

O. E. JACKSON, *Secretary,*
155 Kentucky Street, Petaluma, Calif.

THE AMERICAN SOCIETY OF STOMATOLOGISTS will hold its first annual meeting in New York on May 15, 1928, at New York University, 100 Washington Square East.

For particulars address the Secretary, American Society of Stomatologists, 126 East 40th Street, New York, N. Y.

THE DENTAL SOCIETY OF THE STATE OF NEW YORK will hold its 60th annual meeting at Hotel Syracuse, Syracuse, N. Y., May 16-18, 1928.

Literary exercises, clinics, exhibits, and sessions of the Executive Council will be held at Hotel Syracuse. Make reservations early with the hotel management.

The Executive Council will convene for the transaction of business of the Society on Tuesday, May 15, at 3:00 P. M.

ENTERTAINMENT

Thursday, May 17, Fraternity Luncheons.

Social dinner, entertainment and dance. Social dinner at 6:30 P. M. at *Hotel Onondaga,* followed by entertainment and dance.

Special entertainment for visiting ladies will be provided during the meeting of the Society.

Special arrangement will be made to care for the automobiles of visitors.

During the meeting of the New York State Dental Society, sessions of the New York State Dental Hygienists Association and also of the Educational and Efficiency Society for Dental Assistants will be held. Very instructive programs will be presented.

A cordial invitation is extended to all ethical dentists of New York and other States and Canada.

For further information and programs address

A. P. BURKHART, *Secretary,*
57 East Genesee Street, Auburn, N. Y.

THE IOWA STATE BOARD OF DENTAL EXAMINERS will meet at the State University of Iowa College of Dentistry, Iowa City, Iowa, May 28-June 1, 1928, at 9:00 A.M., for the purpose of examining applicants for license to practise dentistry in Iowa. An examination for dental hygienists also will be given.

All papers and credentials must be filed with the department at least fifteen days prior to date of examination.

For further information and application blanks, address the State Department of Health, Capitol Building, Des Moines, Iowa.

THE BOARD OF DENTAL EXAMINERS OF THE DISTRICT OF COLUMBIA will hold its next examination for dentists and dental hygienists, June 12-16, 1928, at Georgetown University Dental School, 920 H Street, N. W., Washington, D. C. For information address:

C. WILLARD CAMALIER, *Secretary-Treasurer,*
406 Medical Science Building, Washington, D. C.

THE TENNESSEE BOARD OF DENTAL EXAMINERS will meet at 9:00 A.M., June 18, 1928, at the Dental Department, University of Tennessee, Memphis, Tennessee, for the purpose of examining all applicants who present credentials acceptable to the Board. Hygienists also will be examined.

Bring credentials to the Board meeting for examination by the entire Board.

Applications should be in the hands of the Secretary five days before the Board meeting.

For application and clinical requirements, address:

F. W. MEACHAM, *Secretary-Treasurer,*
911 Hamilton National Bank Bldg., Chattanooga, Tenn.

THE ARKANSAS STATE BOARD OF DENTAL EXAMINERS will hold its next annual meeting at Little Rock, June 18-23, 1928.

THE INDIANA BOARD OF DENTAL EXAMINERS will meet at 8:00 A. M., June 18, 1928, at the State House, Indianapolis, Ind., in the House of Representatives room, for the purpose of examining all applicants with proper credentials. Applications should be in the hands of the Secretray one week before the Board meeting.

For applications, clinical requirements, and other information, address

J. M. HALE, *Secretary-Treasurer,*
Mt. Vernon, Ind.

THE DELAWARE BOARD OF DENTAL EXAMINERS will hold its next meeting in the Municipal Building, Tenth and King Street, Wilmington, June 20-21, from 9:00 A.M. to 5:00 P.M.

For further information, address:

W. S. P. COMBS, *Secretary,*
Middletown, Del.

THE WYOMING BOARD OF DENTAL EXAMINERS will meet in Cheyenne, June 26-28, 1928. Address all communications to:

DR. R. S. MOODY,
Cody, Wyoming,

THE CONNECTICUT DENTAL COMMISSION will meet at Hartford, Conn., June 28-30, 1928, to examine applicants for license to practise dentistry and dental hygiene and to transact any other business proper to come before them.

For further information apply to:

ARTHUR B. HOLMES, D.D.S., *Recorder,*
80 Central Avenue, Waterbury, Conn.

THE AMERICAN DENTAL ASSOCIATION will hold its Seventieth Annual Session in Minneapolis, Minnesota, August 20-24, 1928.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS, OF AUGUST 24, 1912

Of The Dental Digest
at New York, N. Y.

Published monthly
for April 1, 1928.

State of New York, }
County of New York, } ss.:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Seeley Vander Veer, who, having been duly sworn according to law, deposes and says that he is the Assistant Secretary of the Dentists' Supply Co. of New York, Publishers of The Dental Digest, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of	Post Office Address
Publisher, The Dentists' Supply Co. of New York	220 West 42nd St., New York, N. Y.
Editor, George Wood Clapp	New Rochelle, N. Y.
Managing Editor, George Wood Clapp	New Rochelle, N. Y.
Business Manager, L. W. Dunham	New Rochelle, N. Y.

2. That the owners are:

The Dentists' Supply Co. of New York	220 West 42nd St., New York, N. Y.
The Amalgamated Dental Company, Ltd.	5-12 Broad Street, London, England
Lewis L. Fawcett	1347 Dean St., Brooklyn, N. Y.
Leroy Frantz	Davenport Neck, New Rochelle, N. Y.
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J. Osborne Whiteley	905 S. Beaver St., York, Pa.
Lillian S. Whiteley	905 S. Beaver St., York, Pa.

The Amalgamated Dental Company, Ltd., is a corporation organized under the laws of England, with an authorized capital stock of £2,850,000, ownership of which is scattered over a considerable part of Europe and includes a long list of names unknown to us, and probably a number of banks and other corporations.

3. That the known bondholders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

THE DENTISTS' SUPPLY COMPANY OF NEW YORK,
Seeley Vander Veer, *Asst. Sec'y.*

Sworn to and subscribed before me this 31st day of March, 1928.

[Seal] Emelie S. Schopp
Notary Public, Westchester County
Certificate filed in N. Y. County
Clerk's No. 265; Register's No. 9286 My commission expires March 30, 1929.